Management of farm contracts and competitiveness

Bachev, Hrabrin

Institute of Agricultural Economics, Sofia

2010

Management of Farm Contracts and Competitiveness

Hrabrin Bachev

This book presents a holistic framework for understanding, analyzing and assessing farm contracts and competitiveness. It incorporates the interdisciplinary approach and specifies different mechanisms of farm governance; defines types and features of farm contracts; identifies technological, institutional, behavioral, dimensional, and transaction costs factors for contractual choice; specifies effective modes for organizational and contractual arrangements; determines the effective boundaries of farms; defines farm competitiveness, its criteria and indicators. The book also analyzes structure and efficiency of farm contracts, and assesses farm competitiveness in Bulgaria. The analyses embraces the post-communist institutional and organizational modernization of farming sector; evaluates the efficiency of various modes for management of land supply, labor supply, service supply, inputs supply, finance supply, insurance supply, and marketing of different type of farms; and assesses the competitiveness of dominating unregistered, cooperative and business farms in the conditions of EU integration and CAP implementation. The book would be helpful for scholars, businessmen, farmers, civil servants, policy-makers, interest groups, representatives of agrarian, non-governmental and international organizations, and all individuals who want to understand farm contracts and competitiveness.

CONTENTS

INTRODUCTION

The issue of farm contracts and competitiveness is among the most topical in academic, business and political respect.

Forms and factors of farm contracts have been intensively studied during the last twenty five years around the world [Bachev 1996; Bachev and Tsuji; Boger and Beckman; Eswaran and Kotwal; Fertő; Guo *et al.*; James *et al.*; Hayami and Otsuka; Little and Watts; Sporleder; Swain; Wilson]. A considerable progress has been made in understanding the economic logic and efficiency of contractual choice, "make or buy decision", sharecropping and employment arrangements, vertically integrated forms, industries and countries specificities etc.

Most studies focus on a particular type contract (land tenure, employment), a specific functional area of farming activity (land or labor supply, marketing), a generic mode of contract (private, public), an individual sector (horticulture, swine), a certain factor of contractual choice (agency or transaction costs, agents opportunism) etc.

At the same time, a little attention is put on the importance and the combination of institutional, behavioral, economic, technological, ecological etc. factors of contractual choice as well as on the comparative efficiency, interdependency and complementarities of different governance arrangements.

With a very few exceptions [Bachev and Tsuji; Boger and Beckman; Fertő; Guo *et al.*] there are no comprehensive studies on structure and factors of farm contracts in transitional economies in general and in Bulgaria in particular.

Similarly, there have been numerous studies on farms competitiveness in developed, transitional and developing countries in the past two decades [Benson; Delgado *et al.;* Farmer; Fertő and Hubbard; Mahmood; Popovic *et al.;* Pouliquen; Shoemaker *et al.;* Zawalinska]. Nevertheless, up to date, there is no widely accepted and comprehensive framework for assessing farm competitiveness in different market, economic, institutional and natural environment.

Usually farm competitiveness is not well defined and it is studied through traditional indicators of technical efficiency, productivity, profitability etc. At the same time, important aspects of farm competitiveness such as the governance efficiency, the potential and incentives for adaptation, and the sustainability are commonly ignored in the analyses.

Furthermore, practically there is no comprehensive study on farm competitiveness in

Bulgaria during post-communist transition and EU integration.

This book suggests a holistic framework for analysis of farm contracts and competitiveness, and investigates the contractual structure and competitiveness of Bulgarian farms.

The first part of the book incorporates the interdisciplinary New Institutional and Transaction Costs Economics (combining Economics, Organization, Law, Sociology, Behavioral and Political Sciences) and develops a framework for analysis of farm contracts and competitiveness.

This new approach specifies different mechanisms of farm governance; defines types and features of farm contracts; identifies technological, institutional, behavioral, dimensional, and transaction costs factors for contractual choice; specifies effective modes for organizational and contractual arrangements; determines the effective boundaries of farms; defines farm competitiveness and its criteria efficiency, adaptability and sustainability; identifies indicators for assessing the individual aspects and the overall competitiveness of farms.

The second part of the book analyzes structure and efficiency of farm contracts, and assesses farm competitiveness in Bulgaria.

The analyses embraces the post-communist institutional and organizational modernization of farming sector; evaluates the efficiency of various modes for management of land supply, labor supply, service supply, inputs supply, finance supply, insurance supply, and marketing of different type of farms; and assesses the competitiveness of dominating unregistered, cooperative and business farms in the conditions of EU integration and CAP implementation.

I am enormously thankful to VDM Publishing House for giving me the extraordinary opportunity to present my work on farm contracts and competitiveness to the larger world audience.

PART 1. FARM CONTRACTS AND COMPETITIVENESS

Chapter 1

1. MECHANISMS AND MODES OF FARM GOVERNANCE

In modern society resources, activities and interactions of individual agents are governed by a number of *distinct mechanisms* (Figure 1).

First, *institutional environment* or the "rules of the game"– that is the distribution of *rights* and *obligations* between individuals, groups, communities, and generations, and the *system(s) of enforcement* of these rights and rules [Furuboth and Richter; North].

The spectrum of rights could embrace the material assets, natural resources, intangibles, certain activities, labor safety, clean environment, food security, intra- and inter-generational justice etc.

A part of the rights and rules are constituted by the *formal* laws, regulations, standards, court decisions etc. In addition, there are important *informal* rules and rights determined by the tradition, culture, religion, ideology, ethical and moral norms etc. The enforcement of various rights and rules is done by the state (administration, court, police) or other mechanisms such as community pressure, trust, reputation, private modes, self-enforcement etc.

Institutions and institutional modernization create dissimilar incentives, restrictions and costs for intensifying exchange, increasing productivity, inducing private and collective initiatives, developing new rights, decreasing divergence between social groups and regions, responding to ecological and other challenges. For example, (socially, legally) acceptable norms for use of labor, plant, livestock, and environmental resources; employment of certain forms of contracts or organizations; trade with particular resources and products etc., all they could differ even between various regions of the same country.

The *institutional "development"* is initiated by the public authority, international actions (agreements, assistance, pressure), and the private and collective actions of individuals. It

is associated with the modernization and/or redistribution of the existing rights; and the evolution of new rights and the emergence of novel (private, public, hybrid) institutions for their enforcement.

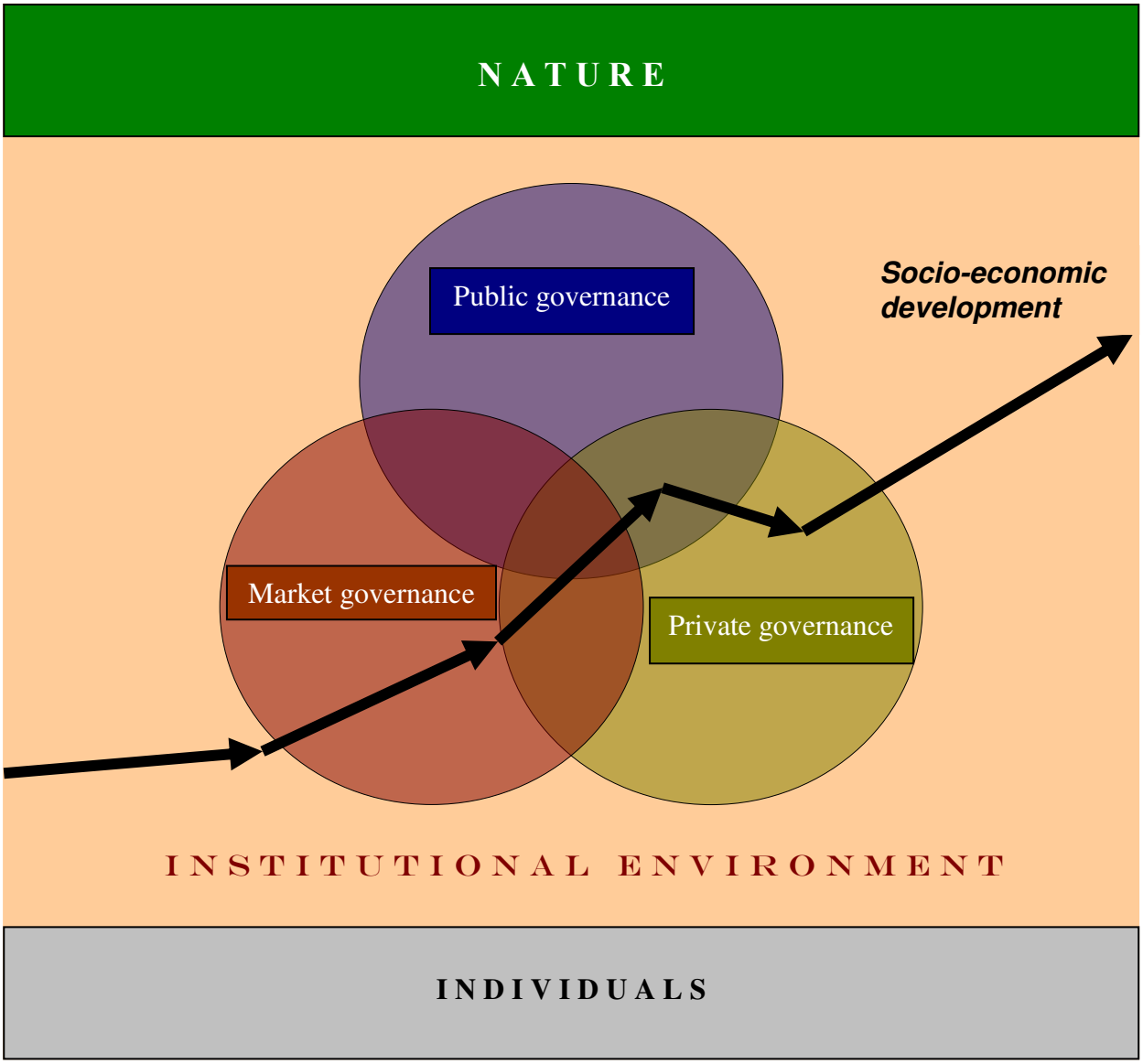


Figure 1. Mechanisms of governance of agrarian activity

The specific institutional environment is a *key parameter* which eventually determines the potential for and the particular type of development in different communities, regions, and countries [North].

In the contemporary society a great deal of individuals' activities and relations are regulated and sanctioned by some (general, specific) formal and informal institutions. However, there is no perfect system of preset outside rules that can govern effectively the

entire activities of individuals in all possible (and quite specific) circumstances of their life and relations. Principally individual agent finds out (can not easily change) the institutional environment and frequently there is not a voluntary ("contractual") choice - agent is to follow socially imposed rules of the game otherwise risks to be punished.

Second, *"invisible hand of free market"* - market price movements and market competition.

The importance of market for the coordination (direction, correction) and stimulation of economic activities, exchanges and allocation of resources is among fundamentals of political economy for more than 200 years. Individual agents use (adapt to) markets profiting from specialization and mutually beneficial exchange (trade) while their voluntary decentralized actions govern overall distribution of efforts and resources between activities, sectors, regions, countries.

Generally, individual agents can not affect the price level ("price taking") but are *free* to accept or not (a voluntary contract) whether to use certain markets, counterparts, prices etc. and take associate costs and risks. However, there are also instances of *lack of* individual *choices* and *unwanted* exchanges (contracts) - e.g. missing markets, monopoly and power relations, externalities etc. Consequently, free market "fails" to govern effectively the entire activity, exchanges, and resources of individuals.

Third, *private modes* ("private or collective ordering") – those are diverse private or collectively designed special *contractual* and *organizational* arrangements governing bilateral or multilateral relations between private agents.

Individuals take advantage of institutional, market etc. opportunities and deal with institutional and market deficiency by selecting or designing mutually beneficial private modes (rules) for governing of their relations and exchanges.

Private mode negotiates *own rules* or *accepts existing* private (collective) *order*, *transfers* existing rights or gives *new* rights to counterpart(s), and *safeguards* absolute (assigned by institutions) and/or contracted rights. In most cases private governance is based on voluntary and mutually beneficial contracts. However, there are instances of unwanted private or collective order (contract) cased by a monopoly or a power situation of some private agents or organizations.

In modern society a great part of agrarian activity is governed by private *negotiations*, *"visible hand of the manager"*, or *collective decision-making*. Nevertheless, there are many examples of "private sector deficiency and failures" in governing of socially desirable activity such as environmental preservation, food security etc.

Forth, *public intervention* ("public order") – these are various forms of a *third-party public* (Government, community, international) *involvement* in market and private sectors such as public guidance, public regulation, public taxation, public assistance, public funding, public provision, property right modernization etc.

Public modes are both *mandatory* and *voluntary* (e.g. public contract) for all or qualified private agents.

The role of public (local, national and transnational) governance has been increasing along with the intensification of activity and exchange, and the growing interdependence of social, economic and environmental activities. In many cases, the effective organization of certain activity through a market mechanism and/or a private negotiation would take a long period of time, be very costly, could not reach a socially desirable scale, or be impossible at all. Thus a centralized public intervention could achieve the willing state of the system faster, cheaper or more efficiently[1].

Nonetheless, there are a great number of bad public involvements (inaction, wrong intervention, over-regulation) leading to significant problems of sustainable development around the globe.

Fifth, *hybrid forms* – some mixture combining features of market and/or private and/or public governance.

In modern agrarian economy there are widespread diverse hybrid modes (market-private, private-collective, public-private, public-collective, national, transnational etc.) aiming to adjust governance to the specific needs of (cooperating, trading etc.) agents and the requirements of sustainable development.

"Governance matters" and depending on the *(efficiency of) system of governance* "put in place", the outcome of the development is quite different with diverse levels of socio-economic progression and environmental conservation (Figure 1). Subsequently

[1] At current stage ("globalization") many of the challenges facing economical and agrarian development (food security, effective management of environmental resources, fight against diseases, climate change,) requite trans-border or even *global governance*.

there has been quite unlike results of agrarian transition of different industries and countries around the world [Bachev 2010].

A *significant part* of farmers relations with other agents are governed though various contracts.

For instance, when chemicals or fuel are purchased on market a *spotlight contract* is used, indicating an acceptance to acquire a particular good for a certain price against agent's obligation for at spot payment. When a labor is hired an *employment contract* is applied stipulating negotiated terms on how labor will be used, conditions and terms of work, modes of payment etc. In marketing of farm produce *long-term contracts* with wholesales, processors, and food-chains are frequently used specifying quantities, qualities, time of deliveries, prices etc.

When a farmer sets up or joins a cooperative (firm) he signs accepting the terms of organization's *constitutive contract* with members' rights and obligations. Similarly, when a farmer joins a public funding, training etc. program he agrees to get a *public contract* for services, subsidies etc. for free or against some commitments - e.g. to use funding purposely, provide environmental protection services etc.

The contract is a mean for a voluntary exchange of rights and obligations between two or more parties by which they govern their relations in a mutual benefit.

The rights that agents give and receive could be on *human capital, natural resources, material and financial assets, liabilities* etc. The *subject* of contract are rights agents really posses as *right of ownership, rights of management, user rights, rights to generate income* etc. Rights can be transferred *entirely* (sale) or *partially* (hiring, lease).

The exchange can occur *instantly* in the present (e.g. a cow for cash) or in some *moment* or *period of time in the future* after contracting (sale of future yield, land lease, employment of labor etc.). The later opens up possibility some of the parties to "steal" rights (non-fulfillment of promises) transferred with a contract [Furuboth and Richter].

The initial distribution of rights and obligations between agents in society is done by laws and regulations, tradition, moral, religion and ethical norms etc. In modern society a great part of relations between agrarian agents are regulated (governed) by laws and formals norms.

For instance, it is not allowed to trade farm products not meeting formal standards for quality and safety; subject of sale could be only the right to use labor but not the

personality of the worker[2]; employment of children is forbidden; marketing of certain products is to be done at fixed prices or by certified organizations etc.

Preset outside rules and restrictions (should) facilitate relations of economic agents. However, they can hardly regulate all their aspects in the specific conditions of individual agents. The contract is the mean by which individual agents optimize relations creating private rules of exchange (of owned private rights) adapted to their specific conditions and needs [Williamson]. The only formal (institutional) restriction is that private contract must not contradict laws and harm interests of third parties.

Furthermore, there are widespread *informal* (unwritten) contracts which enforcement through formal (e.g. court) system is difficult or impossible[3].

[2] Slavery is prohibited around the world but still practiced in some countries.

[3] Nevertheless they are quite effective and broadly applied in agrarian sector of transitional, developing and developed countries alike.

Chapter 2

2. TYPE OF FARM CONTRACTS

There is a big *variety* of contractual relations in which agrarian agents participate or may take part in. Individual type of contracts have different *specific characteristics* – specific subject, formal requirements, possibility for an effective transfer and protection of various rights, costs for preparation, enforcement, disputing, and termination of contractual terms.

"The rational" agrarian agents take into account the potential *benefits*, *advantages* and *shortcomings* of divers contractual forms when chose modes for governing of their relations with other agents.

A particular attention is put on assessment of possibilities for *opportunistic behavior* of counterparts and inclusion of special contractual terms for safeguard against it. Tendency for opportunism means that if there is an opportunity for a party to get non-punishably an extra rent from exchange (performing unwanted exchange by others) the agent will likely "steal" the rights of others [Williamson].

Agrarian contracts can be classified in some of the following *major* categories:

• **Sale-purchase contract** – that type of contract *arranges a permanent transfer of rights on particular resource or object against payment of a certain price*.

The major risk for buying farmer is from *pre-contractual* opportunism of seller. The buyer usually does not have full information for the quality of acquired object, and seller is not interested in revealing the existing shortcomings. For instance, when a second-hand tractor is purchased it is difficult to evaluate whether the technical state correspond to the claims of seller (problems appear later on during exploitation); real yield of a new seed variety is discovered in cropping time etc. In order to safeguard against these risks a preliminary testing, a trying period before final purchase, giving a guarantee by seller etc. are negotiated.

There is also possibility for *post-contractual* opportunism if a long-term asset (e.g. equipment) combined with after-sale technical service (e.g. maintenance, upgrading etc.) is purchased. Since the trade is completed (money transferred) the promise for future servicing is not fulfilled or it is executed badly or with delays. The opportunistic behavior of seller decreases (self-restricted) when a long-term contract is employed or there is a high likelihood for new contracts between counterparts in future.

On the other hand, farmer as a seller often faces *post-contractual* opportunism in terms of delayed payment or non-payment for marketed farm output. In order to protect from this risk a safeguard term (e.g. advance payment, cash payment, cash and carry) is applied or interlink deals is contracted (crediting and/or inputs supply by buyer against marketing of farm produce). In any case, risk diminishes considerably when farmer chooses a seller/buyer to whom he trusts or selects market agents with built a *good reputation.*

• **Lease contract** – this type of contract *arranges the transfer of right on a temporary use of certain resource or object against payment of a rent*.

Major risks for farmers here are from *pre-contractual* opportunism associated with the quality of leased item (similar to a purchase contract) and from employment of a fix rent. For instance, when a fix rent is contracted the tenant takes the entire risk of losses (or benefits) from the variation of productivity and income of leased resource (object, land, animal). That sort of risk could be shared with the owner through contracting a share rent or even entirely eliminated through applying a market rent.

The lease contract also gives possibility for *pre-* and *post-contractual* opportunism from the lease-holder. In the former case, the tenant does not declare his intention to use ineffectively leased resource (object) while in the later case he is practicing such behavior (bad maintenance of leased building and equipment, poor care of leased animals, improper crop rotation, insufficient compensation of nutrition intakes through fertilization, pirate sharing or trade of new variety seeds, software or technology). Moreover, it is common a delayed or non-payment of contracted rent by tenants.

• **Employment contract** – this contract *arranges the right to receive a particular service from hired for a certain period of time labor against payment of salary or wage by the employer.*

A special feature of this “service” contract is that the one party (the employer) acquires the *right to direct, control and fire* another side – thus there is a *relation of subordination.* This mode gives possibilities for rapid adaptation to current labor needs of farm. Alternatively either is has to be prepared a very detailed service contract (with relevant rights and obligations of partners in all possible contingencies during the period of their relationship) or to permanently (re)negotiate new contracts along with changing conditions and needs of each partner.

Major risks for farmers associated with this type of contract are from *pre-* and *post-contractual* opportunism. In the first case, the applicant-worker could misinform for his capabilities or intentions in order to get the job. Farmers can protect asking recommendations, selecting candidates with certain education level or training certificate, organizing interview and/or test for determining the applicant’s ability etc. In the second case, hired worker may not put the necessary (contracted) efforts after receiving the job. The later is facilitating by the fact, that in agriculture permanent supervision of labor is impossible and/or productivity is not always proportional to the labor input (e.g. positive or negative impact of climate factor). Besides, a highly qualified worker may leave the job in a critical for the farm moment (e.g. combine operator during harvesting time) because of offered a higher salary by the competitor farm.

In order to restrict these forms of opportunism farmers apply: a permanent employment contract, appointment of team-leaders (supervisors), output-based compensation, payment of bonuses, give incentives for improving productivity through labor participation in farm management, rights for pay holidays, providing free services, housing etc.

• **Service contract** – this type of contract *arranges the right to receive a certain service against payment of a price.*

The service could be *material* (cultivation of land, plant protection, transportation, advertisement, software, water and electricity supply) or for accomplishing a *particular task* (maintenance of equipment, veterinary service, agronomic advice, education, guarding, garbage collection).

Unlike employment contract here both sides are in *equal* position (rather than of subordination). In many instances, the farmer is not even able to “direct” service provider as it is with medical treatment, education, consulting, guarding etc. Frequently it could be utilize an output-based payment which significantly restricts the opportunism of service

supplier. However, often the employment of a time-based or fixed payment is the only possible option. Principally a long-term supply contract improves the quality of provided service – getting familiar with a particular farm (land parcels, equipments, animals), desire to keep or renew the contract etc. In any case, selection of a supplier with a good reputation diminishes the risk from opportunistic behavior.

Nevertheless, there are widespread instances of a (semi)monopoly situation when farmers have to accept the terms and the modes of implementation of a service contract – in electricity and water supply, garbage collection, public (e.g. extension, information) and administration services etc.

• **Loan contract** – this type of contract arranges a *temporary transfer of property right on some amount of money (money loan) or product (loan in kind) against payment or not of a certain price (interest)*.

Unlike lease contract the debtor is not obliged to return the identical money/product which is borrowed, but just the same *quantity* of borrowed assets (usually with some interest above the loan).

In modern conditions most common is the contract for money loan from a commercial bank, private individual or entity, or public agency. The control over utilization of the loan by the creditor is very difficult because of the high "mobility" of money. In order to avoid the opportunism of debtor a strict selection of applicants is practiced by crediting agent (studying out credit history, reputation, papers of property ownership; requirement for guarantors), and a significant collateral, guarantee and/or coo-financing is requested. All these considerably increase the cost of (or entirely block) using that type of contract by farmers.

On the other hand, farmers often face a *pre-contractual* opportunism of creditors taking advantage of their ("monopoly" or power) position and employing unfavorable for farmers terms and/or not informing borrowers about the "hidden" costs associated with the loan contract.

Increasingly other more-efficient forms for giving loan are applied in package with sale of long-term assets (leasing), short-term assets (in installments or delayed payments), or interlinked credit against marketing of farm output or services.

• **Insurance contract** – this contract *arranges the transfer of particular risk-taking during a period of time against payment of a certain price*. When event (incident)

covered by the insurance contract occurs, the insurer pays an insurance premium according to negotiated terms.

Assurance is offered (sold) against various risks – damages on property, yield, animals and persons caused by *natural* (hail, frost, storm, flood, fire), *health* (injury, disease, dead) or *social factors* (destruction, theft).

Usually, opportunism may occur by insured person before signing the contract (not disclosing the real information for possible risks) or during contract execution period (not taking actions for reducing damages when event occurs; consciously provoking damages in order to get insurance premium etc.). That augments considerably the insurance prices and restricts utilization of insurance contracts by farmers.

On the other hand, farmers often "discover" the *pre-contractual* opportunism of insurers only after the occurrence of harmful event. Then they find out that not all assurance terms (protected risks, extend of coverage of damages, ways of assessment of damages, payments etc.) had not been well explained and/or adapted to farmers needs before signing the contract.

For many kind of farm related risks markets evolve very slowly and/or insurance services are practically inaccessible by majority of farmers. What is more, for many important risks insurance is not available for purchase at all – e.g. risk of lack of market demand of farm products, fluctuation of prices of farm produce, possible opportunism of counterparts in contractual relations etc. That is why farmers have to develop other (private, collective) modes to safeguard their investments and rights or lobby for a public intervention in assurance supply [Bachev and Nanseki].

• **Coalition contract** – this type of contract *regulates rights and obligations in coalition of actions and/or resources of two or more agents.*

Members of the coalition exchange certain rights associated with the ownership, control and direction of particular resources, management of the coalition, distribution of income and other benefits of the activity, coalition period, ways of expansion of the coalition and termination of membership etc.

According to the specific goals different *type of coalitions* may be established – informal partnerships (coalition of resources and/or activity), cooperatives (non-for profit), firms (profit-making), associations (collective actions) etc.

In coalition contract most often there is a risk of *post-contractual* opportunism, when some member(s) does not fulfill obligations to the coalition or uses improperly the organization in their own private interest. In order to avoid that risk partners with a high mutual confidence are selected (family members, relatives, friends), and the membership of collation is restricted (mutual control on opportunism is practically possible). In coalition with *open membership* (cooperative, corporation) effective mechanisms are put in place to motivate members (preferences for working members of coalition) and secure direct members participation in the management and control of the coalition.

In a very big open membership coalition it is possible a particular *pre-* and *post-contractual* opportunism as well. Creation and development of such coalition is associated with significant costs (for initiation, establishment, registration, organizational modernization) while the efficiency and sustainability of the new form is uncertain. That is why there are no incentives for individuals to participate in that process and make the necessary investments of efforts and means. However, in case of a successful organization, the willingness to join and benefit ("free-riding") from new the coalition greatly increases.

In the real agrarian economy there is a great variety of contractual arrangements designed to fit the needs of counterparts – *natural, pure, complex, interlinked, complementary, bilateral, trilateral, multilateral* etc. forms.

For instance, in the traditional (non-cash) agrarian economy natural exchanges are typical – goods, resources and services are traded against other goods, resources and services (barters, gifts); loans, interests, wages, rents and membership fees are paid in kind etc.

Furthermore, in the modern economy there are wide spreading more complex and interlinked contracts arranging: inputs (service) supply *and* crediting, inputs (service) supply *and/against* marketing of farm output, acquiring a share in the property (cooperative, partnership) against servicing, crediting *and* marketing etc.

Chapter 3

3. FACTORS FOR CONTRACTUAL CHOICE

The choice of type of contract depends on a number of factors (Figure 2):

First, *personal characteristics of individual agents* such as preferences, ideology, knowledge, capability, training, managerial experience, risk-aversion, reputation, trust, "contract" power etc.

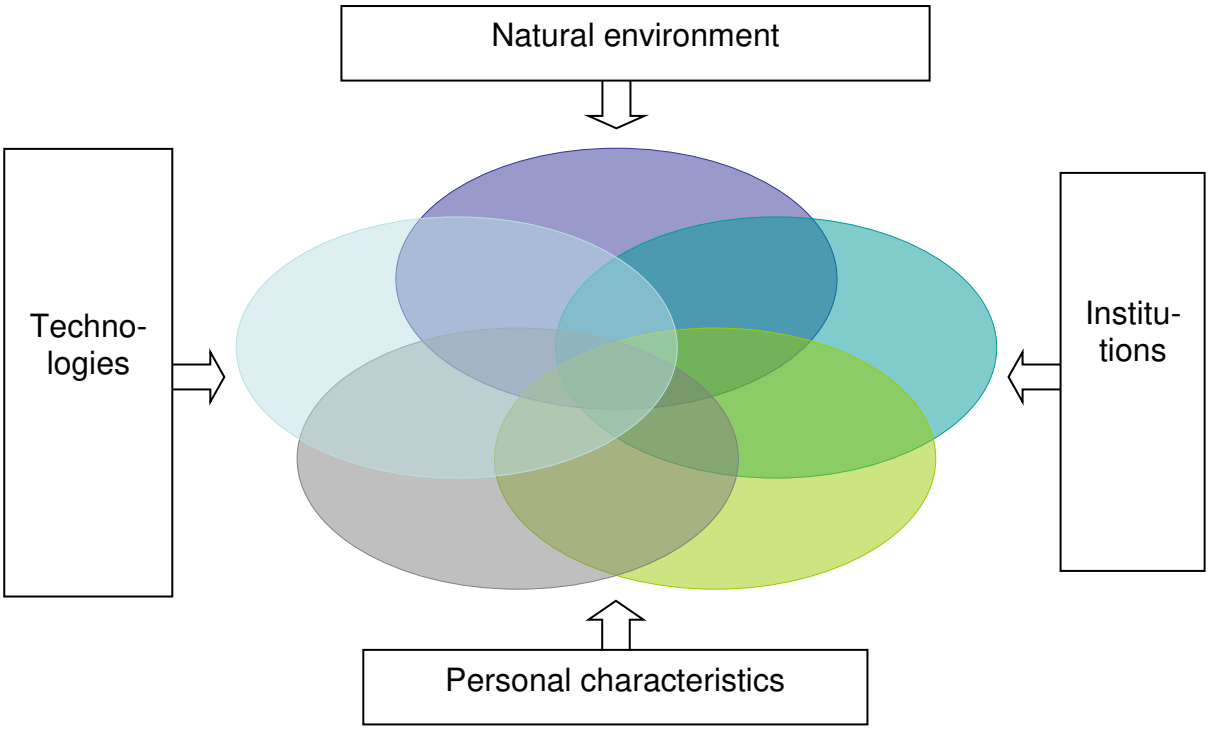


Figure 2. Factors for contractual choice in agriculture

For instance, farming organization is often restricted to a family partnership. In some cultures, the cooperative is the preferred mode of agrarian organization. If farmer is a good manager he will be able to design, control and implement a bigger (more efficient) form

adapted to his specific needs – effective management of more internal (labor) and outside (specialized service, inputs supply, marketing) contracts.

A risk-taking farmer will prefer more risky but productive forms - e.g. bank credit for a new profitable venture). When counterparts are family members (or close friends) there is no need for complex contracts since relations are easily "governed" by the good will and mutual interests of parties. Benefits for farmers from a contractual arrangement could range from monetary or non-monetary income; profit; indirect revenue; pleasure of self-employment or family enterprise; enjoyment in agricultural activities; desire for involvement in environment, biodiversity, or cultural heritage preservation; increased leisure and free time; to other non-economic benefits.

Second, *natural and technological factors* such as non-separability or inter-dependence of activity, technological economies of size and scale, etc.

In rare cases there is only *one practically possible* form for governing of agrarian activity. For instance, a natural minimal size of farm organization is determined by a technological parameter such as *non-separability* of activities (e.g. a biological nonseparability of individual animal). Also in Japanese dispersed paddy agriculture water supply could not have been conducted by individual farmers (high interdependency, nonseparability of water use) and since earliest period water use organization developed as public projects [Mori].

Effective governance of some environmental activities requires a certain scale and thus collective actions at local, regional, national or transnational scale [Bachev 2009]. Nevertheless, beside few examples, in farming is almost impossible to find cases where the choice of form of governance is unilaterally determined by *technological* parameters.

Another technological factor which could define the mode of governance (e.g. farm size) is possibilities to *explore technological economy of scale and scope*. For instance, in order to use a large harvester capacity a farmer increases the operational size; or he produces two or more products under different technologies in order to use "free" resources (e.g. available family labor).

Nevertheless, development of technology usually follows demand and in fact is a changeable parameter as well[4]. Moreover maximum economy of scale can be reached not through internalizing activity but by market exchange with a specialized activity - e.g.

[4] Otherwise it is very difficult to explain widespread distribution of small scale machinery in agriculture.

selling or buying harvesting service. Free farm resources could also be traded (sell, lease out) more effectively in market place instead of using them in own non-specialized activities (opportunity costs reason).

In fact there is an opposite tendency in the real agrarian economy - dependence of technological development from the governance structure. It is common when institutional restrictions (for land transfer, hiring labor etc.) and the high level of transaction costs (e.g. for outside credit supply) prevent exploration of the potential of available technologies. Domination of primitive technologies is a rule rather than an exception in the farming sector of transitional and developing countries.

In other instances, high transaction uncertainty or imperfect institutional arrangements extend farming organization far beyond "technologically optimal" size. For instance, it has been typical "over-concentration" of East-European agriculture during communist era, and "over-integration and over-cooperation" in transitional period thereafter [Bachev 2006].

Third, *institutional environment* – formally and/or informally imposed *social order* (rules, norms, restrictions) and *associated costs*.

Often the choice of governing mode is pre-determined by *institutional restrictions* as some forms for carrying out farming activities, land and labor supply, trade of output etc. could be socially unacceptable, very costly, or illegal in certain countries or period of time.

For instance, corporate and cooperative organization of farming is forbidden in many countries; market trade of farmland, natural resources, and some outputs (inputs) is illegitimate; private management of natural ecosystems (parks, reserve zones) is not allowed; some type of farms, agrarian property or transactions are preferentially taxed by governments etc.

Nevertheless, when costs associated with the illegitimate governance is not high (possibility for disclosure low, enforcement and punishment insignificant) while benefits are considerable, then the more effective modes prevail – large gray or black sectors of economy are common around the globe.

Principally, the choice of contractual form will greatly depend on the *efficiency of (outside) institutional environment* – regulations, stability and enforcement of property rights, extend of direction of private relations, possibility for rapid and costless dispute resolution, efficiency of punishment of offenders etc.

For instance, in conditions of well-working public system of regulations (quality standards, price guarantees) and laws and contract enforcement a preference will be given to spotlight and classical (standard) contracts. On the other hand, if rights on major agrarian resources are not defined or not well defined, and absolute and contracted right effectively enforced (as was the case during most of the post communist transition) that lead to domination of primitive subsistence farming, informal, personal and over-integrated forms, unsustainable organizations, undeveloped and missing markets etc.

Usually, every agrarian activity and exchange could be governed through a great variety of *alterative* forms.

For instance, cultivation of land by a tractor can be governed in different ways:

• a farmer can buy (unified ownership), rent (rent contract) or lease a tractor (input and credit supply interlinked contract);

• a farmer could buy cultivation service from market (contract service);

• *a* number of farmers may buy a tractor (joint ownership) and use it in a group (producers cooperative) or individually;

• a farmer can join a cooperative providing cultivation services (non for profit organization);

• a farmer may lease land out to a tractor owner and share output (share tenancy contract);

• a farmer can hire a tractorist to work on farm (employment contract), and may even sell out cultivation service to market (profit making organization);

• cultivation service to farms could be subsidized by Government (trilateral mode), or provided by a municipality or state company (public organization).

One extreme for the farm manager is to specialize exclusively in governing of market transactions rather than production management. For example, leasing-in farmland and long-term material assets, purchasing all services for cultivation and harvesting of output, buying needed short-term material assets, selling all primary products on market.

Another extreme is a close internal organization such as one-person or group subsistent farm - farmer(s) employ only own resources (land, labor, technological knowledge) and consume the entire product.

Between these two polls there is a *spectrum of feasible modes* for governing of agrarian activity and exchange: various sort long-term contracts, association, cooperation, interlinked organization, hybrid forms, farms of different type (partnerships, corporations, complex hierarchies) etc.

The different governance modes are alternative but *not equally efficient* modes for organization of activities. Each of them has distinct advantages *and* disadvantages to protect individuals rights and investments, coordinate and stimulate activities, explore economies of scale and scope, save production and governance costs etc.

The free market has a big coordination and incentive advantages ("invisible hand of market", "power of competition"), and provides "unlimited" opportunities to benefit from specialization and exchange. However, market governance could be associated with a high uncertainty, risk, and costs due to price instability, great possibility for facing an opportunistic behavior, "missing market" situation etc.

The special contract form ("private ordering") permits a better coordination, intensification, and safeguard of activity. However, it may require large costs for specification of contract provisions, adjustments with constant changes in conditions, enforcement and disputing of negotiated terms etc.

The internal (ownership) organization allows a greater flexibility and control on activity (direct coordination, adaptation, enforcement, and dispute resolution by a fiat). However, extension of internal mode beyond family and small-partnership boundaries (allowing achieving the minimum technological or agronomic requirements; exploration of technological economies of scale and scope) may command significant costs for development (initiation and design, formal registration, restructuring), and for current management (collective decision making, control on coalition members opportunism, supervision and motivation of hired labor etc.).

The separation of ownership from management (cooperative, corporation, public farm/firm) gives enormous opportunities for growth in productivity and transacting efficiency – internal division and specialization of labor; exploration of economies of scale and scope; introduction of innovation; diversification; risk sharing; investing in product promotion, brand names, relations with customers, counterparts and authorities. However, it could be connected with huge transaction costs for decreasing information asymmetry between management and shareholders, decision-making, controlling opportunism, and adaptation.

The cooperative and *non-for profit form* also suffers from low capability for internal long-term investment due to non-for-profit goals and non-tradable character of shares (so called “horizon problem”).

The choice of governing mode greatly depends on *transaction costs* [Coase; Williamson]. Governance is usually associated with significant costs for protection, contracting and exchange of individual rights. For example, farmers have costs for finding best prices and partners; negotiating conditions of exchange; contract writing and registration; enforcing negotiated terms through monitoring, controlling, measuring and safeguarding; disputing through a court system or another way; adjusting or termination along with evolving conditions of exchange etc.

Therefore, rational agents will seek, chose, and develop such modes for governing their activity and exchanges which maximize transacting benefits and minimize transaction costs. Moreover, both *(current)* transaction costs for using governing forms and *long-term* transaction costs for development (initiation, modernization, liquidation) of governance mode are taken into account.

If transaction costs were *zero* then the mode of the governance would not be of economic importance [Williamson]. In such a world individuals would manage their relations with an equal efficiency though free market, or through private organizations of different types, or in a single nationwide company. All information for the effective potential of transactions (exploration of technological opportunities, satisfying various demands, respecting assigned and transferred rights) would be costlessly available. And the individuals would costlessly define new rights, and protect their (absolute and contracted) rights, and trade owned resources (and products) in mutual benefit until exhausting the possibilities for increasing productivity (situation known as “Pareto optimum/efficiency”).

Thus the type of governance becomes crucial since various modes give unequal possibilities for participants to coordinate activities, and stimulate an acceptable behavior of others (counterparts, dependents), and protect their contracted and absolute rights from unwanted expropriation.

Nevertheless, often the high costs make it difficult or block otherwise efficient (mutually beneficial) transactions. For instance, despite the great pay-off of investments in agrarian research and innovation, market and private agents do not organize such activity in a sufficient scale because of their high uncertainty and low market and private appropriability [Bachev and Labonne]. There is a strong need for a “third-party” (Government, NGOs, international assistance etc.) intervention in order to make such activity more effective or possible at all.

If there is a market and private sector failure but an effective government intervention is not introduced in a due time the agrarian “development” is substantially deformed (public failure is possible) [Bachev 2004].

In Bulgaria for instance, there has been a great number of bad examples for Government under- and over-interventions in agrarian sector. Consequently, primitive and uncompetitive small-scale farming; predominance of over-integrated and personalized exchanges; ineffective and corrupted agrarian bureaucracy; blocking out of all class of agrarian transactions (such as innovation and extension supply, long-term credit supply, supply of infrastructure and environmental goods); and development of a large informal (gray) sector, all they have come out as a result [Bachev 1996, 2007].

In the long term only effective governing structures for the *specific* economic, institutional and natural environment and personal characteristics of agents will dominate in agriculture [Bachev 2004].

Thus there will be no singe (universal) mode for effective organization of all type of agrarian activity and exchange in any possible natural, institutional, and economic surroundings. In any particular moment of time agrarian activities will be carried out (governed) through a great variety of modes: some will be governed by “invisible hand of market”, other will be carried out through a special contract mode, some will be managed within hierarchy, some will be supported by a third party, some would require more complicated and mixed modes.

Chapter 4

4. EFFECTIVE MANAGEMENT CHOICES

In addition to production costs, the agrarian agents make significant transaction costs *for governing relations with other agents* - individuals, private entities, public authorities[5].

The institutional environment considerably affects the level of transaction costs of individual agents. For instance, when private rights are well defined and protected, and (public) system for contract enforcement work well - that facilitates transactions between individuals and the effective allocation of resources.

(Development of) institutional environment also imposes significant transaction costs to agents – e.g. for studying out and complying with various institutional restrictions (community or state norms, regulations, standards), formal registration of contracts and entities, efforts to deal with bureaucracy etc. A good example in this respect are current problems of many Bulgarian farms to meet the new EU requirements ("institutionally determined" costs) related to new product quality, food safety, labor, environmental, animal welfare etc. standards [Bachev 2008]. Furthermore, EC is increasingly criticized for imposing unnecessary regulations (and related costs for agrarian agents) for the size, shape and color of vegetables and fruits for trade in EU etc.

Transaction costs have two *behavioral origins*: individual's *bounded rationality* and *tendency for opportunism* [Williamson].

Economic agents do not possess full information about the system (price ranges, trade opportunities, adverse effects of activities on others, trends in development) since the collection and processing of such information would be either very expensive or impossible (e.g. for future events, for partners intention for cheating, time and space discrepancy between individual action and adverse impacts on others etc.). In order to optimize decision-making agents have to spent costs for "increasing their imperfect rationality" - for data collection, analysis, forecasting, training etc.

[5] *Production costs* are the cost associated with proper technology ("combination of production factors") of certain farming, servicing, environmental, community development etc. activity. The *transaction costs* are the costs for governing the economic and other relations between individuals.

Individuals are also given to opportunism in two major forms: *pre-contractual* ("adverse selection") - when some party uses "information asymmetry" to negotiate better contract terms; and *post-contractual* ("moral hazard") - when some counterpart takes an advantage of impossibility for full observation on his activities (by another partner or by a third party) or when he takes "legal advantages" of unpredicted changes in transacting conditions (costs, prices, environment etc.).

A special *third form* of opportunism occurs in the development of large organizations (known as “free-riding”). Since the individual benefits are often not proportional to the individual efforts, everybody tends to expect others to invest costs for the organizational development and later on to benefit from the successful new organization [Olson].

Commonly, it is very costly or impossible to distinguish the opportunistic from non-opportunistic behavior (because of the bounded rationality). Therefore, agrarian agents have to protect their transactions and rights from the hazard of opportunism through: *ex ante* efforts to protect their “absolute” (given by dominating institutions) rights, and find a reliable counterpart and to design an efficient mode for partners credible commitments to “contracted” (voluntary transferred) rights; and *ex post* investments for overcoming (through monitoring, controlling, stimulating cooperation) of possible opportunism during contract execution stage.

Technological development also affects enormously the structure and level of transaction costs [North]. For instance, mechanization and standardization of farming operations (products) increases bounded rationality of farm manager, and diminishes possibility for opportunism of hired labor and counterparts. That leads to the extension of activities and transactions under a singe management (the farm size) – enlargement of internal transactions (internal division and specialization of labor) as well as outside market and/or contract transacting (procurement, trade, cooperation etc.).

Possibilities that progression and application of modern production (e.g. precision farming), transportation, measurement, information, communication etc. technologies gives to coordinate and intensify transactions and minimize related costs are immense - easy assessment and traceability; on line information, coordination, monitoring, detecting, advise; direct low costs exchanges (expressing demands, finding best prices and partners, negotiating, trading, disputing) and collective actions (coalitions) of interested agents at national and international scales; rapid detection of problems and interventions by the governments and international agencies; full participation of individuals in and control on public decision-making etc.

However, that enormous potential for increasing productivity, effective allocation of resources, conservation of environment etc. meets the restrictions of imperfect institutional arrangements which eventually slow-sown scientific and technological progress, impede individual market and private transactions, allow particular agents (bureaucrats, interest groups) to benefits from the status-quos, and lead to unsustainable "development". It is widely recognized that constant "food crisis" has been a consequence not of the lack of sufficient (world) technologies and resources for food production but the bad governance - inefficient Governments, inefficient international organizations, and inefficient global governance.

One direction for evaluation of efficiency of alternative contractual arrangement is the *direct comparison of costs* for each transaction in different forms. Organization which requires fewer costs is more efficient – e.g. it is more economical to use a marketing cooperative instead of own direct marketing of farm output.

Part of the transaction costs can be easily specified – costs for management, licensing and registration, agro-market information, promotion and marketing of output, general management, hiring lawyers and court suits, guarding property and yields, payment of bribes etc.

However, a significant portion of transaction costs is either very difficult (too expensive) or impossible to be assessed. In that group we can include the costs for finding best partners, negotiation, controlling and enforcement of contractual terms, organizational development, interlinked transacting, unrealized (failed) deals etc. Besides, it is often extremely complicated to separate transaction costs from traditional production expenditures[6]. For example, while executing farming operations a farmer supervises hired labor; during transportation of chemicals he negotiates marketing of output etc.

Component comparison of transacting costs could not always give an idea for efficiency of organizations. Very often the alternative form decreases one type of costs while increasing another type transacting costs – e.g. internalization of a transaction (replacement of market with integral mode) is associated with reduction of costs for information supply (overcoming market uncertainty), permanent (re)negotiations along with constantly changing conditions of exchange, safeguarding investments from outside opportunism etc. On the other hand, it enlarges costs for organizational formation, decision making, integral management, supervising and motivation of hired labor etc. In above example with alternatives for marketing of farm output the "internal realization" (personal

[6] All these *"measurement problems"* make it impossible to extend the traditional Neoclassical models simply by adding a new "transacting" activity [Furuboth and Richter].

consumption, production “consumption”, processing) could be chosen as more efficient form to direct sell or use of marketing cooperative.

Often it is difficult to select a base for comparison in view that the high transacting costs entirely block development of an alternative organization. For instance, market for agrarian credit did not emerged in Bulgaria during most of the transition and the internal supply (utilization of own finance, direct outside co-investment) was the only possible form for finance supply of farms [Bachev, 2006]. Here it is impossible to determine the comparative level of transaction costs and appreciate the “high” efficiency of integral mode for financing. In that case funding with “own means” and with “bank credit” are not real alternatives but completely different governing arrangements.

Finally, a good part of transactions in agriculture is governed not by “pure” but through complex, interlinked and/or supplementary modes - e.g. inputs supply in a “package” with know-how, credit, and/or service supply; crediting of production against marketing of output; governing of critical activities within own farm and membership cooperative etc. Thus, it is important to take into consideration *the overall (total) costs for organization of transactions of different types* - all external *and* internal transaction costs of the farm.

Another direction for evaluation of comparative efficiency of alternative governing forms is the *Discrete structural analysis* [Williamson]. Here the assessment of absolute levels of transaction costs of alternative governing structures is not necessary. This approach aims to evaluate the relative levels of transacting costs between alternative modes of governance, and selecting that one which most economizes on transacting costs. Actually, farm managers are interested not in absolute level of transaction costs in different form, but in organization with the lowest comparative costs for a particular transaction.

In order to implement that new approach following steps is to be undertaken:

First the *“critical dimensions” of transactions*, responsible for the variation of transaction costs, are to be identified. “Frequency”, “uncertainty”, and “asset specificity” have been identified as critical factors of the transaction costs by Williamson [Williamson] while the “appropriability” has been added by Bachev and Labonne [Bachev and Labonne].

When the *recurrence* of transactions between the same partners is high, then both (all) sides are interested in sustaining and minimizing costs of their relations (avoiding opportunism, building reputation, setting up adjustment mechanisms etc.). Besides, the

costs for development of a special private mode for facilitating bilateral (or multilateral) exchange could be effectively recovered by frequent exchange.

When the *uncertainty*, which surrounds transactions increases, then costs for carrying out and secure the transactions go up (for overcoming information deficiency, safeguarding against risk etc.). Certain risks could be diminished or eliminated by a production management or through a special market mode (e.g. purchase of insurance). However, the governance of most transacting risk would require a special private forms – e.g. trade with origins; providing guarantees; using share-rent or output-based compensation; employing economic hostages; participating in a risk-pooling, inputs-supply or marketing cooperative; a complete integration [Bachev and Nanseki].

The transaction costs get very high when *specific assets for the relations with a particular partner* are to be deployed[7]. In this case it is impossible to change a partner of transaction (alternative use of assets) without a big loss in value of the specific capital. Relation specific (dependent) investments are "locked" in transactions with a particular buyer or seller (personality of partner matters), and cannot be recovered through a "faceless" market trade.

Costless redeployment (alternative use) of specific assets is not possible if transactions fail to occur, they are prematurely terminated, or less favorable terms are renegotiated (in contract renewal time and before the end of life-span of specific capital). Therefore, dependant investment (assets) have to be safeguarded by a special form such as a long-term or tied-up contract, interlinks, hostage taking, joint investment, quasi or complete (ownership) integration. Often, the later is quite expensive, investment in specific capital are not made, and activity either can not take place or occurs without (or loss of) comparative advantages in respect to productivity

If *symmetrical* assets dependency (a regime of bilateral trade) exists there are strong incentives in both parties to elaborate a special private mode of governance. However, when *unilateral* dependency exists then dependent side (facing mini or total monopoly) has to protect investments against possible opportunism (behavioral uncertainty or certainty) either through integrating transactions (unified organization, joint ownership,

[7] Specificity is not a technological but *transacting* characteristic of assets. In one situation a particular capital (investment) could be highly *universal* (easy deployment to another internal usage or outside trade) while in others - highly *specific* (a big dependency from the relations with a certain counterpart (buyer, seller, coalition partner).

cooperative)[8]; or safeguarding them with interlinked contract, exchange of economic hostages, development of collective organization to outstand asymmetrical dependency (for price negotiation, lobbying for Government regulations) etc.

The transacting is particularly difficult when *appropriability* of rights on products, services or resources is low. "Natural" low appropriability has most of the agrarian intellectual products - agro-market information, agro-meteorological forecasts, new varieties and technologies, software etc. Besides, all products and activities with significant (positive or negative) externalities are to be included in this group.

If the appropriability is low the possibility for unwanted (market or private) exchange is great, and the costs for protection (safeguard, detection of cheating, disputing) of private rights and investments extremely high. Agents would either over produce (negative externalities) or under organize such activity (positive externalities) unless they are governed by an efficient private or hybrid mode - cooperation, strategic alliances, long-term contract, trade secrets, or public order.

Second, we have to "*align transactions (differing in their attributes) with the governance structures (differing in their costs and competence) in discriminating (mainly in transaction cost economizing) way"* [Williamson].

According to the *combination* of the specific characteristics of each activity and transaction, there will be different the most effective form for governance of that particular activity (Figure 3).

Agrarian transactions with a good appropriability, high certainty, and universal character of investments (the partner can be changed anytime without significant additional costs) could be effectively carried across free market through *spotlight* or *classical contracts*. Here the organization of transactions with a special form or within the farm (firm) would only bring extra costs without producing any transacting benefits.

Recurrent transactions with low assets specificity, and a high uncertainty and appropriability, could be effectively governed through a *special contract*. The *relational* ("neoclassical") *contract* is applied when detailed terms of transacting are not known at outset (a high uncertainty), and a framework (mutual expectations) rather than a specification of obligations is practiced. Partners (self)restrict from opportunism and are

[8] When technological opportunities for economy on scale (scope) on specific assets can be achieved. Otherwise integration of transactions will be lost-making comparing to outside price (production costs) competition.

motivated to settle emerging difficulties and continue relations (situation of a frequent bilateral trade). Besides, no significant risk is involved since investments could be easily (costlessly) redeployed to another use or users (no assets dependency exist).

Generic modes	***Critical dimensions of transactions***								
	Appropriability								
	High								*Low*
	Assets Specificity								
	Low				*High*				
	Uncertainty								
	Low		*High*		*Low*		*High*		
	Frequency								
	High	*Low*	*High*	*Low*	*High*	*Low*	*High*	*Low*	
Free market	Y	Y							
Special contract form			Y			Y			
Internal organization					Y		Y		
Third-party involvement				🚗				🚗	
Public intervention									🚗

Y - the most effective mode; 🚗 - a necessity for a third party involvement

Figure 3. Effective modes for contractual arrangement in agriculture[9]

A special contract forms is also efficient for rare transactions with a low uncertainty, high specificity and appropriability. Dependent investment could be successfully safeguarded through contract provisions since it is easy to define and enforce relevant obligations of partners in all possible contingencies (no uncertainty surrounds transactions) [10] . Here the occasional character of transactions does not justify internalization within the farm (firm).

Transactions with a high frequency, uncertainty, assets specificity (dependency), and appropriability, have to be organized within the farm/firm (internal ownership mode).

[9] Differences in personal characteristics of agents are *disregarded*. Only *extreme levels* (high-low) of the critical factors are considered. In the real agrarian economy there is a big *variation* of critical dimensions, and thus of the effective governing forms (including mixed, hybrid, interlinked etc. governance).

[10] Practically it is difficult (costly) or impossible to write a complete contract for complex transaction [Williamson].

For instance, managerial and technological knowledge is quite specific to a farm, and its supply has to be always governed through a permanent labor contract and coupled with ownership rights [Bachev, 2004]. Capital investments in land are to be made on owned (or long-leased-in) rather than a seasonally rented land (high site and product specificity). All "critical" to the farm material assets will be internally organized - production of forage for animals; important machineries; water supply for the irrigated farming etc. While universal capital could be effectively financed by a market form (e.g. a bank credit), the highly specific investments can be only made through an internal funding (own funds, equity sell, joint venture).

If the specific and specialized capital cannot be effectively organized within the farm (economy of scale and scope explored, funding made)[11], then an effective governing form outside farm-gates is to be used - group farming, joint ownership, interlinks, cooperative, lobbying for a public intervention.

When a strong assets (capacity, technology, time of delivery, site, branding) *inter-dependency* with an upstream or downstream partner exists, then it is not difficult to govern transactions through a contract mode (strong mutual interests for cooperation and restriction of opportunism). For instance, effective supply (procurement) contracts between farmers and processors are widely used in dairy, meat, vine, organic industries (symmetrical dependency).

However, very often farmers face *unilateral dependency* and need an effective (ownership) organization to protect their interests. Transacting costs for initiation and maintaining of such "collective organization" is usually great (big number of coalition, different interests of members, opportunism of "free-riding" type) and it is either unsustainable or does not evolve at all. That creates serious problems for the efficiency (and sustainability) of individual farms - missing markets, monopoly or quasi-monopoly situation, impossibility to "induce" a public intervention etc.

Serious transacting problems arise when condition of assets specificity is combined with a high uncertainty, low frequency, and good appropriability. Here the elaboration of a special governing structure for a private transacting is not justified, specific investments are not made, and activity (restriction of activity) fails to occur at an effective scale ("market failure" and "contract failure"). Similar difficulties are also encountered for rare transacting associated with a high uncertainty and appropriability.

[11] Integration of transactions would either increase management costs (needs to buy from or sell to a competitor) or it would be loss-making comparing to outside production costs (price) competition.

In all these cases, a third part (private agent, NGO, public authority) involvement in transactions is necessary (through assistance, arbitration, regulation) in order to make them more efficient or possible at all. Emergence and unprecedented development of organic farming, and systems of trade with origins and "fair-trade" are good examples in that respect. There is an increasing consumer's demand (a price premium) for organic, original, and fair-trade products in many countries. Nevertheless their supply could not be met unless effective *trilateral governance* (including an independent certification and control) has been put in place.

When appropriability associated with a transaction (activity) is low, there is no pure market mode to protect and carry out activity effectively. Nevertheless, respecting others rights (unwanted exchange avoided) or "granting out" additional rights to others (needed transactions carried) could be governed by a "good will" or charity actions of individuals, NGOs, government or international organizations.

For instance, a great number of voluntary environmental initiatives (agreements) have emerged driven by the competition in the food industries, farmers' preferences for eco-production, and responds to the public pressure for a sound environmental management. Unprecedented development of "codes of behaviors", eco-labeling and branding, environmental cooperatives, and "green alliances", all they are good examples in that respect. Nevertheless, environmental standards are usually "process-based", and "environmental audit" is not conducted by an independent party, which does not guarantee a "performance outcome". Therefore, most of these initiatives are seeing as a tool for an external image manipulation. Recent huge food safety, animal safety, and eco-scandals have demonstrated that such private schemes could often fail (result of high bounded rationality and possibility for opportunism).

In any case, voluntary initiatives could hardly satisfy the entire social demand especially if they require significant costs. Some private modes could be employed if a high frequency (a pay-back on investment is possible) and a mutual assets dependency (thus an incentive to cooperate) exists.

For example, inter-dependency between a dairy farm and a milk processor in a remote region (capacity and site dependency); or a bee keeper and a neighboring orchard farm (symmetric dependency between needs of flower and needs for pollination). In all these instances, unwritten accords, interlinking, bilateral or collective agreements, close-membership cooperatives, codes of professional behavior, alliances, internal organization etc. are used.

However, emerging of special (private) large-members organizations for dealing with low appropriability (and satisfying the entire “social” demand) would be very slow and expensive, and they unlikely be sustainable in a long run (“free riding” problem). Therefore, there is a strong need for a *third-party public* (Government, local authority, international assistance etc.) *intervention* in order to make such activity possible or more effective [Bachev 2004].

For example, supply of environmental goods by farmers could hardly be governed through private contracts with individual consumers because of low appropriability, high uncertainty, and rare character of transacting (high costs for negotiating, contracting, charging all potential consumers, disputing). At the same time, the supply of additional environmental protection service is very costly (in terms of production and organization costs) and would unlikely be carried out on a voluntary basis. Besides, the financial compensation (price-premium) of farmers by willing consumers through a pure market mode is also ineffective due to the high information asymmetry, massive enforcement costs etc. A third-party mode with a direct public involvement would make that transaction effective: on behalf of the consumers the State agency negotiates with individual farmers a *public contract* for “environment conservation and improvement service”, coordinates activities of various agents (including a direct production management), provides public payments for compensation of farmers, and controls implementation of negotiated terms.

Chapter 5

5. ECONOMIC BOUNDARIES OF FARM

The analysis of efficiency and factors of agrarian contracts let better understand and determine the *effective size (boundaries)* of farms and other agrarian organizations for the specific institutional, economic and natural environment of a particular industry, country etc.

In the traditional (Neoclassical) framework, the farm is presented as a "production structure" and analyses of efficiency are restricted to production costs - "factors productivity", "optimization of technological factors according to marginal rule".

However, the traditional approach fails the explain: why (given competitive setting) there exist so many *farms with different productivity* of resources utilization[12], and why there is *so big variety of agrarian organizations* at all (one-person farms, group farms, cooperatives and firms of different kind, subsistent farms, small and large farms etc.

The modern approach studies farm and other agrarian organizations as a *governance structures* which efficiency depends not only on their capacity to minimize on production costs, but also to economize on transaction costs [Bachev 1996, 2004].

In a *one-person* subsistent farm there are no transaction costs (one agent), but limited possibility for extension of farm size through investment in specialized (and specific) human, material and natural capital, expansion of consumption etc.

"Internal" opportunities for increasing productivity (through division of labor, investments, exploring economy of scale and size, new demand) augments along increasing the *members of coalition* (family or group farm, partnership) and/or outside trade of resources and products. The later is associated with additional transaction costs for making the coalition (finding complementary and reliable partners), increased internal costs for management (coordination, reducing bounded rationality, controlling opportunism of coalition members) and for outside market or contract trade (employment of labor; land and inputs supply; financing, marketing of output).

[12] For instance, production costs productivity of Bulgarian cooperatives has been 5 times lower than in private farms [Bachev 2006].

Thus the effective boundaries of farms will be determined by the *trade-off* between the additional *gain in benefits* (productivity, consumption etc.) and *the transaction costs*.

Furthermore, the high costs of outside exchange make it more profitable to carry out division and cooperation of labor (a transaction) within an organization (firm, group farm) instead across the market[13]. For instance, a specialized livestock farm organizes internally a crop (forage) production activity (hiring additional labor and farmland) because of the significant costs and risks for market procurement of needed forage.

Nevertheless, the internal management of transactions is also associated with costs (for directing, stimulating and supervising hired labor; coordination and controlling activity of partners) which restricts unlimited expansion of borders of an organization[14].

Thus a transaction will be carried in an organization if the costs are lower than for governing that transaction across market or in another organization [Coase, 1937]. Accordingly a farm becomes *bigger if integrates the governance* of more internal and outside transactions. Similarly, the farm becomes *smaller if ceases* previously organized transaction(s) and let them to market or another organization(s).

Moreover, the effective size and economic boundaries of farm will be determined through optimization of *total benefits* and minimization of the *total* (production *and* transaction) *costs* [Bachev 2004]. Consequently, the distribution of overall (agrarian) activities between different farms and agrarian organizations will be determined by the *comparative costs (efficiency)* for using various governing arrangements.

Transacting modes and acceptable *net benefits* vary according to individual's preferences, entrepreneurship ability, risk aversion, opportunity costs of owned resources etc.

Depending on the personality of resource owners and the (transacting) costs and benefits of their coalition, different type of farm will be preferred - *one-person farm (firm), family farm (firm), group farm or partnership (firm), cooperative farm,* and *corporative farms (firm)* [Bachev 2004].

Expected benefits for farmers could range from the monetary or non-monetary income; profit; indirect revenue; pleasure of self-employment or family enterprise; enjoyment in agricultural activities; desire for involvement in environment, biodiversity, or

[13] Fundamental "discovery" that *"there are costs of using the price mechanism"* [Coase 1937] explained why production can not be carried out without any organization and why there are organizations of different type and size in agriculture.

[14] Otherwise all agricultural production could be effectively carried on by one big company.

cultural heritage preservation; increased leisure and free time; to other non-economic benefits[15].

In the specific economic, institutional and natural environment (socio-economic development, legal framework, support policies, tradition, access to new technology, level of transacting costs) various types of farm will have quite different effective *horizontal* and *vertical boundaries*.

For instance, in *transitional* conditions of high market and institutional uncertainty, and inefficient property rights and contract enforcement system, most agrarian investments happened to be in a regime of high specificity (dependency). As a result (over)integrated modes such as low productive subsistent household and group farming, or large production cooperatives and agro-companies, have been dominating in most East-European countries.

Alternatively, in more *matured* economies, where markets are developed and institutions stable, the agrarian assets (activity) are with more universal character. Therefore, farm borders are greatly determined by the family borders, and more market and mixed (contract rather than entirely integrated) forms prevail.

Transaction costs minimizing helps us understand the reason of emergence and the efficiency of a great variety of agrarian organizations in the modern world – economic boundaries of farms ("make of buy decision"; extend of internal division and specialization, and product diversification), divers contractual arrangements and type of coalitions (partnerships, firms, cooperatives), economic needs for cooperation with competitors (inputs supply, marketing, lobbying etc. associations) or vertical (downstream, upstream) counterparts, joint ventures, pace and limits of development of agrarian markets etc.

What is more, efficiency of a particular organization can hardly be assessed without analyzing the efficiency of *complementary* and/or *competing* organization(s). For instance, "high" efficiency of small-scale farms and the producers (inputs supply, marketing) organizations in most countries can not be properly evaluated without analyzing their high complementarities[16].

In order to assess the farm's efficiency we have **first,** put *individual* transaction in the *centre of analysis*, and assess the level of associated costs and benefits.

[15] For instance, "desire for preservation of farm for future generation" has been a major reason for the persistence (sustainability) of a great number of part-time farms in Japan.

[16] e.g. the high efficiency and sustainability of small scale subsistence and semi-market farms, and production cooperatives in transitional Bulgarian agriculture [Bachev 2006].

Major types of transactions of a farm entrepreneur are associated with:

- *management supply,*
- *know-how supply,*
- *innovation supply,*
- *supply of land and other natural resources,*
- *labor supply,*
- *inputs supply,*
- *service supply,*
- *finance supply,*
- *insurance supply,*
- *marketing of services and products.*

Next, we need to *identify* alternative forms for organization of different farm transactions in the specific market, institutional and natural environment, and *assess* their comparative efficiency.

For example, the identified principle modes for governing of transactions in major functional areas of Bulgarian farms are presented in Figure 4.

The comparative efficiency is assessed for the specific conditions of *each farm* as contractual (governance) form providing the biggest *net benefits* is selected.

For instance, in order to explore technological economies of scale a farmer is considering an expansion through application of modern machineries and leasing cheaply available farmland (Figure 5).

Three contractual forms for securing needed machineries are feasible – a partnership with another farmer, buying mechanization service from a specialized market provider, and a purchase of necessary machineries. While alternative forms for machinery supply (inputs and services) are associated with the same additional transaction costs, the later mode gives biggest additional benefit in terms of growth in productivity and additional income. Nevertheless, the considerable transaction costs for outside funding (securing a bank loan) make it impossible (inefficient) to select the third form otherwise allowing maximum productivity (and farm expansion).

Generally, the contract with the highest transaction costs (for credit supply in the above example) eventually determines *(limit)* the farm boundaries.

Functional areas	Alternative contractual modes		
	Market contract	**Special contract**	**Special organization**
Supply of management	na	Employment contract with guaranteed minimum salary and output-based bonuses	Cooperation Partnership
Supply of land and other natural resources	Purchase Short-term lease	Long-term lease with a fix rent Long-term lease with a share rent Long-term lease with a market rent	Cooperation Partnership
Labor supply	Daily hire Seasonal hire	Permanent labor contract with a fix remuneration Permanent labor contract with result based payment	Partnership Cooperation
Supply of short-term material assets	Purchase with a spotlight contract Standard contract	Long-term procurement contract Supply contract interlinked with a credit supply, service supply, and/or marketing of farm produce	Cooperation
Supply of long-term material assets	Purchase with a spotlight contract Standard contract	Long-term lease contract Contract for purchase interlinked with crediting (leasing) and/or services	Partnership Cooperation
Service supply	Purchase with a spotlight contract Standard contract	Long-term supply contract Supply contract interlinked with other services, products or crediting	Partnership Cooperation
Innovation and know-how supply	Purchase with spotlight contract Standard contract Free consultation in the farm advisory system	Long-term supply contract Supply contract interlinked with supply of material assets and/or crediting	Cooperation
Financing	Bank loan Loan from an individual agent Loan from a private organization	Co-investment Crediting interlinked with supply of material assets and services Contract with a public funding program	Partnership Cooperation
Insurance	Purchase of insurance Purchase of “assurance service”	Insurance contract interlinked with material assets Long-term insurance contract	Cooperation
Marketing of products and services	Retail sale Wholesale trade Standard contract	Long-term contract for marketing Marketing contract interlinked with crediting, supply of material assets and/or services	Partnership Cooperation

Figure 4. Principle contract forms for functional areas of Bulgarian farms

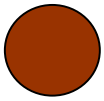
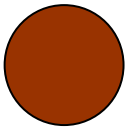
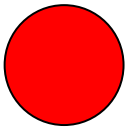
Criteria	Alternative contract forms				
	Partnership	***Service contract***			***Purchase of machinery***
1. Additional benefit (growth in productivity and income)		<		<	
2. Additional transaction costs *- for inputs and service supply*		=		=	
- for financing		=		<	
3. Net benefits	negative	positive			negative
The most effective form					

Figure 5. Assessment of alternative contract forms for farm expansion

A major factor restricting farm extension, which is generally identified around the world, is the enormous costs for enforcement (monitoring, measuring, controlling) of non-family labor contracts [Hayami and Otsuka]. That is why an owner-operated farm is the most common form for farm organization around the world.

On the other hand, the enormous “credit supply” and “marketing” costs were specified as the critical factors limiting farm enlargement in the transitional Bulgarian agriculture [Bachev and Kagatsume]. Subsequently, despite favorable natural environment, cheap labor and farmland, good tradition, and growing market demand, a great part of overall farming activity has been carried out in numerous small, semi-market and subsistence farms with primitive technology, productivity and eco-standards.

Finally, we can use our new framework to define the *sustainability* of different farms and agrarian organizations.

A farm will be *sustainable* if it manages all transactions in the most economical for the owner(s) way – that is the situation when exist no activity which could be carried out with a net benefit [Bachev 2005; Bachev and Peeters].

If a farm does not govern activity or transactions effectively, it will be unsustainable since it experiences high costs and difficulties using institutions (possibilities, restrictions)

and carrying out activity (transactions) comparing to other feasible organization. In that case, there will be strong incentives for exploring the existing potential *(adapting to a sustainable state)* through reduction or enlargement of farm size, or via reorganization or liquidation of the farm. Thus either alternative farm or non-farm application of resources; or farm expansion through an employment of additional resources; or trade instead of internal use of owned land and labor; or taking over by (or merger with) another farm or organization[17], will take place.

Furthermore, we have to estimate farm's *potential (incentives, ability) for adaptation* to evolving market, institutional and natural environment through effective changes in the *governing forms* (saving on transacting costs) and *production structure* (exploring technological possibilities for growth in productivity) [Bachev 2005; Bachev and Peeters]. Thus if a farm does not have a potential to *stay* at or *adapt* to new more sustainable level(s) it would be either liquidated or transformed into another type of farm.

For instance, if a farm faces enormous difficulties meeting institutional opportunities and restrictions (e.g. new quality and environmental standards, production quotas); or has serious problems supplying managerial capital (as it is in a one-person farm when an aged farmer has no successor), or supply of needed farmland (a big demand for non-agricultural use of land), or funding activities (insufficient own finance, impossibility to sell equity or buy credit), or marketing output (a changing demand for certain products, strong competition with the imported products), then it would not be sustainable despite high historical or current efficiency.

Currently there are numerous unsustainable farms in Bulgaria and most EU countries, which can hardly adjust to fundamental changes in CAP and associated enhanced competition and new safety, environmental, animal welfare etc. standards [Bachev 2010].

The traditional *statistical, farming system, accountancy* etc. data are little suitable to assess the overall efficiency and sustainability of different farms. In order to apply suggested new approach it is necessary to (get) use a great amount of *micro-economic data* (for different type of transactions governed by divers organizations, and for costs and benefits associated with the alternative governance modes) as well as *data about specific (economic, institutional, natural etc.) environment* in which different organizations evolve.

The goal of such analysis is not only to test the adequacy of this new approach, but also to identify transaction difficulties, and suggest directions for improvement of public policies, and farming and business strategies.

[17] In most developed countries, the sustainable development has been associated with *disappearance* of traditional farming organization in major sectors (poultry, beef, pig) which is *taken over* by or *integrated* into related industries [Barry *et al.*; Martinez].

Chapter 6

6. ASSESSMENT OF FARM COMPETITIVENESS

Farm competitiveness characterizes the *ability (internal potential, incentives) of a farm to compete on (a) market successfully.* It is a feature only of the *"market* farms" whatever their specific type is – semi-subsistence (semi-market) holdings, family farms, cooperatives, business enterprises etc. If a farm is non-market (subsistence holding, member oriented cooperative), or it is quasi or entirely integrated in a larger venture (processing enterprise, food chain, restaurant, eco-tourism etc.) it has no such attribute.

A good competitiveness means that a farm can produce *and* sell out its products and services *effectively*. The later could be a result of the competitive *prices, variety, quality, time of delivery, location* or other *specificity* (newest, uniqueness, organic character, origin etc.) of farm and/or its products. Contrary, the insufficient competitiveness indicates that a farm is experiencing serious problems in producing and marketing its output effectively (or at all) because of the high production *and/or* transaction costs.

The farm competitiveness usually refers to farm's ability to compete on a *certain market(s)* – retail, wholesale, local, regional, international, niche, for commodities for direct consumption or processing, mass or specific products, services, etc.

In some cases, a *segment* of farm's activity could be competitive while other(s) not.

For instance, in many mix Bulgarian farms the crop production is usually highly competitive while livestock operations are not. Besides, there are various reasons for keeping "profitable" *and* "unprofitable" activities within a farm – e.g. preferences, internal use of "free" resources, technological and transaction costs economies of scale and scope, interdependency of assets or activities, risk management etc. [Bachev 2004]. Therefore, farm efficiency and competitiveness characterize the overall rather than the partial performance of a farm.

The *level* of competitiveness of a particular farm depends on two groups of *factors*:

• *internal factors* - managerial capital, owned resources, potential for innovation and adaptation, productivity, relative power, location, relation specific capital, reputation etc. **and**

• *external factors* - evolution and maturity of agrarian markets, number and power of competitors, development of downstream and upstream industries, level of public support to agriculture, institutional restrictions, border control measures, liberalization of local markets and international trade etc.

The specific level of competitiveness of a particular farms, or farms in individual sub-sectors, regions and countries depends on internal and outside factors. However, the farm competitiveness is always a *characteristic of the farm* and expresses its *internal potential* (ability) to compete successfully in the *specific* economic, institutional etc. environment.

Farm competitiveness is usually assessed in a *relative* term (comparing to other similar farms) or *absolute* term (comparing to other competitors on a market). A particular farm could have a higher, average or lower performance than the other similar farms, and be competitive or uncompetitive on a particular market. Namely, because of the insufficient competitiveness of most (or some of) domestic farms some countries apply a public protection mode – subsidies, state purchase, price guarantee schemes, border restrictions etc.

A farm will be competitive if it is *efficient*, and *adaptive,* and *sustainable*. Thus, there are three *criteria* for assessing the competitiveness of a farm (Figure 6).

First, *farm efficiency* – that is the potential of a farm to organize effectively the production *and* transaction activity (of farmer, coalition of members), and minimize the overall production *and* transaction costs.

Broadly applied traditional approach can not assess adequately the efficiency of farms since it restricts analysis to the *technical* efficiency (productivity) and/or *financial* efficiency (profitability). At the same time, significant *transaction costs* associated with the farming organization and farm's potential to economize on governance costs are completely ignored.

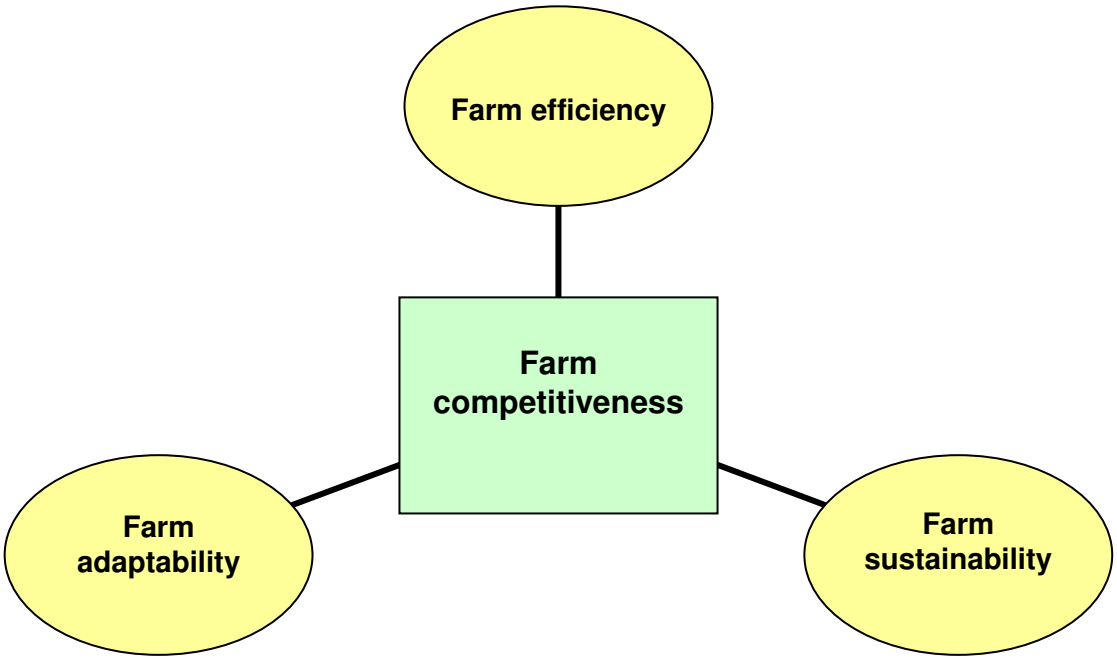


Figure 6. Criteria for assessing competitiveness of farm

Farm is not only a production but a *governance* structure [Bachev 1996, 2004]. Therefore, the *overall* production *and* transaction costs *and* benefits of a farm are to be taken into account in the assessments of farm efficiency.

Furthermore, different *types* of farms (subsistent, semi-market, part-time, family, group, cooperative, firm, corporative etc.) have *unlike missions, goals, costs* and *benefits* for owners, *modes of enhancement of efficiency* etc. Therefore, they apply quite different *strategies for development* – e.g. preservation or expansion of a family farm, income support, group farming, innovation, commercialization, market domination, specialization, diversification, cooperation with competitors, environmental conservation, integration into processing and food chain, direct (on farm) marketing, international trade etc.

Consequently, diverse farms would have quite *different ways* for expression of their proper efficiency. Thus, it is to be expected a significant variation in the rate of profitability on investments in an agro-firm (a profit-making organization) from the "pay-back" of expenditures or resources in a family farm (a major or supplementary income generation form), in a cooperative (a member oriented organization), in a public farm (a non-for profit organization) or in a semi-market farm (giving opportunity for productive use of otherwise "non-tradable" resources such as family labor, land etc.).

Indeed, a significant variation in productivity and profitability has been found in all estimates on “efficiency” of different farms during transition now in countries from Central and East Europe [Bachev, 2004; Csáki, C. and Lerman; Gortona and Davidova; Mathijs and Swinnen; Zawalinska].

Furthermore, there are many highly effective (non-market, cooperative etc.) farms which are not competitive since they do not compete on market at all. In order to be competitive a farm must be effective *and* be able to govern effectively its *marketing* transactions.

Therefore, the system of assessment of farm competitiveness is to take into account the farm’s specific *and* market efficiency.

Second, *farm adaptability* – that is farm’s potential (ability, incentives) to adapt to constantly changing market, economic, institutional, and natural environment.

A market farm could be very effective (in optimization of current production and transaction costs) but unless it posses a good adaptation potential it will not be competitive. A market farm must have not only high *historical* or *current* efficiency but a *long-term* ability to perform effectively.

The later implies existence of a good potential for farm adaptation to: liberalization of markets, globalization and augmentation of competition; dynamics of demand and prices of farm products; evolution of supply and prices of agrarian inputs, labor, services, finance etc.; progression of public support to farms; development of market and institutional norms, standards and regulations; changes in natural environment (e.g. global warming, extreme weather, water shortages etc.).

For instance, in Bulgaria there are many highly productive (small scale, livestock etc.) farms which are *not able* adapt (lack of managerial ability and/or needed resources) to increasing competitive pressure, and new EU quality, safety, environmental preservation, animal welfare etc. standards, and/or challenges associated with the global climate change [Bachev and Nanseki; Bachev 2010].

There are also marketing farms which have *no incentives* to adapt to new environment. For instance, if a farm/firm is in the end of its life cycle (an old age farmer with no successors) it does not have stimulus for a long-term investment for enhancement of adaptability and competitiveness.

Similarly, despite the huge public support for restructuring of so called “semi-market farms” in Bulgaria, the progress in implementation of this measure has been very slow (merely 3% of the targets) because of the lack of interests in beneficiaries.

The farm adaptation is achieved through progressive improvement of the *factors of production* (resources, technologies, varieties of plants and livestock), *production structure* and/or *organization of the farm* (labor organization, internal management structure, management of contractual relations, modernization of organizational form etc.).

Thus the system of assessment of farm competitiveness is to take into account the farm’s potential for adaptation to specific market, institutional and natural environment.

Third, *farm sustainability* **–** that is farm’s ability to maintain (continue) over time.

A farm could be efficient and adaptive but unsustainable in a medium or long-term. Therefore, such farm is not going to be competitive.

For instance, around the world there are many part-time farms which “sustain” during the economic crisis (high unemployment, low income) and “suddenly” disappear once the economic situation improves. Likewise, in western countries there are many unsustainable family farms which managers are in retirement age but there is no successor willing to undertake the enterprise.

Similarly, in Bulgaria there are a great number of otherwise efficient but highly unsustainable in a short to medium-term farms. Most of these farms are individual or family holding operated by old managers[18], or they are located in mountainous regions and specialized in tobacco production (declining markets, limited alternative employment opportunities), or they are old style production cooperatives (crisis in management, reduction in membership).

Furthermore, a market farm could be inefficient and inadaptable but highly “sustainable” – e.g. during transition there were many such farming organizations in Bulgaria (various public farms and firms in the *process* of privatization, reorganization or liquidation).

Thus the system of assessment of farm competitiveness is to take into account the farms sustainability in shorter and medium terms along with its efficiency and adaptability.

The evaluation of the overall competitiveness of an individual farm, or farms of different types, specialization or regions, requires a complex *qualitative* analysis. This

[18] 40% of the farm managers in the country are older than 65 (MAF).

assessment is to determine the factors and levels of farm efficiency, adaptability and sustainability in the specific market, economic, institutional and natural environment.

Furthermore, for each criteria one or more *indicators* is to be selected giving idea about (measuring) the level of farm efficiency, adaptability and sustainability.

Indicators for farm efficiency

There are a *great variety* of indicators for evaluating farm's technical and financial efficiency suggested in textbooks (manuals) and/or practically used by various types of farms in diverse sub-sectors of agriculture and different countries. For assessing farm competitiveness, there is to be selected *few* (key) indicators which best characterize the technical and financial efficiency of the specific type of farm in the conditions of a particular sub-sector, region and country.

For instance, for the conditions of Bulgarian market farms the *quantitative* indicators for the levels of labor productivity, land and livestock productivity, profitability of farm, profitability of own capital, liquidity, and financial autonomy, are the most appropriate for evaluation of farm's technical and financial efficiency (Koteva and Bachev) (Figure 7).

Criteria	Indicators
Farm efficiency	Level of labor productivity Level of land and livestock productivity Level of profitability of farm Level of profitability of own capital Level of liquidity Level of financial autonomy Level of governance efficiency
Farm adaptability	Level of adaptability to market environment Level of adaptability to institutional environment Level of adaptability to natural environment
Farm sustainability	Level of sustainability

Figure 7. Indicators for assessing farm competitiveness

For assessing farm's governance efficiency a *qualitative* analysis is needed embracing farm's goals, ownership structure, personal characteristics of the farmer and labor, critical dimensions of different farm transactions, level of internal and outside

transaction costs, available governance alternatives; competition, cooperation, integration and/or complementarily with other organizations etc.

Furthermore, according to the farmer's personal preferences, and farm's transacting costs and benefits, it could be found that a particular farm would be highly efficient (or inefficient) with various levels of (combination of the) productivity, profitability, financial security, and financial dependency.

For instance, despite the low productivity, profitability and financial independence of many Bulgaria cooperatives, their efficiency for members has been high - non-for profit organization of highly specific for members assets and services with minimum production and/or transaction costs [Bachev 2006].

Indicators for farm adaptability

For assessing farm's adaptability three *qualitative* indicators could be used – the level of adaptability to market environment, the level of adaptability to institutional environment and the level of adaptability to natural environment (Figure 7). Moreover, the level of the *overall adaptability of the farm* will be determined by the indicator with *the lowest* value.

For instance, in spite of the high adaptability to market and natural environment of many Bulgarian farms, their overall adaptability has been low since the level of adaptability to the new institutional requirements and restrictions is low [Bachev 2005; Bachev 2010].

Indicators for farm sustainability

For assessing farm's sustainability a *qualitative* analysis of the farm and its environment is needed. Some of the factors reducing farm sustainability are *internal* for the farm (e.g. natural "life cycle" of the farm, low efficiency, insufficient adaptability) while others are *external* and associated with the evolution of market, economic, institutional and natural environment.

In order to assess the overall sustainability of a farm a *quantitative* indicator "level of sustainability" could be calculated.

Initially, the *managerial problems* associated with the effective supply of needed factors of production and the marketing of output are to be identified, and their *severity* ranged (Table 1). *Persistence* of serious *unsolvable* problems in any of the functional areas of the farm management would indicate a *low governance efficiency* and *sustainability*.

Next, the level of sustainability in supply of each of the factors of production and in the marketing of output is to be determined through *transformation* of the "level of problems in management" into the "levels of sustainability" (Table 2).

Table 1. Identification of type of farm's problems in supply of factors of production and marketing of output

Serious problems in:	Character of management problems				
	None	Insignificant	Normal	Big	Unsolvable
Effective supply of needed land and natural resources		☺			
Effective supply of needed labor	☺				
Effective supply of needed material and biological inputs		☺			
Effective supply of needed innovation and know-how			☺		
Effective supply of needed services			☺		
Effective supply of needed funding					🚑
Effective utilization and marketing of produces and services				🚑	

Table 2. Scale for conversion of levels of management problems in levels of sustainability

Seriousness of problems	Level of sustainability
None	Very high
Insignificant	High
Normal	Good
Big	Low
Unsolvable	Unsustainable

The level of the *overall* sustainability of a farm will coincide with *the lowest* level of sustainability of supply of any of the factors of production or the marketing of products.

For instance, despite the high sustainability of supply of natural, human and material factors of production, the overall level of sustainability of most Bulgarian farms is low because of the low sustainability of the management of finance supply and/or marketing of output [Bachev 2005].

In addition to traditional statistical, farming system, and accountancy data, a new type of *micro-economic data* for farm's specific characteristics, activity and governance as well as *data for farm's market, institutional and natural environment* are needed to access the level of competitiveness through various indicators. These *new* data are to be collected through interviews with farm managers and/or experts in the area.

The analysis of various aspects of farm competitiveness let not only to determine its level but also to identify the critical factors impeding its improvement, and assist farm management and public policies modernization.

Often, the values of different indicators for individual criteria are with *different directions*. For instance, the efficiency and sustainability of a farm(s) could be high while adaptability low and vise versa.

In order to get idea about the *overall* competitiveness of a farm and to be able to make *comparison* of competitiveness of different farms it is necessary to calculate an *Index of Farm Competitiveness*.

Initially, we have to convert the specific value of indicators for efficiency, adaptability and sustainability into universal *unitless* values. An exemplary scale for conversion of the qualitative indicators for overall efficiency, adaptability and sustainability into universal (unitless) indicators is presented in Table 3.

Table 3. Scale for conversion of qualitative indicators for overall efficiency, adaptability and sustainability into universal indicators

Qualitative value of indicators			Quantitative value
Level of efficiency	**Level of adaptability**	**Level of sustainability**	
Very high	Very high	Very high	1
High	High	High	0,75
Good	Good	Good	0,5
Low	Low	Low	0,25
Insufficient	Insufficient	Insufficient	0

Next, we could calculate an integral Index of Farm Competitiveness (Ic) by multiplying the Index of Farm Efficiency (Ie), Index of farm adaptability (Ia) and Index of Farm Sustainability (Is) using formula:

Ic = Ie . Ia . Is

The value of Ic would vary between 0 and 1, as a farm would be *highly competitive* when **Ic** is 1, *uncompetitive* when **Ic** is 0, and with a range of different (low, good etc.) levels of competitiveness when **Ic** is between 0 and 1.

The specific ranges and weights of indicators for assessing farm efficiency and integral competitiveness as high, good, low and insufficient is to be determined by *experts* according to the specific conditions in each country, subsector of agriculture or type of farming organization.

Depending on identified ranges and weights for assessment, a particular farm would have quite unlike level of the overall competitiveness.

For instance, if there is no competition with imported products in a local market, a farm with relatively low productivity will be competitive. On the other hand, the same farm would be uncompetitive in an opened and matured market with a strong internal and international competition.

PART 2. FARM CONTRACTS AND COMPETITIVENESS IN BULGARIA

Chapter 7

1. POST-COMMUNIST INSTITUTIONAL TRANSFORMATION

A fundamental transformation of Bulgarian economy has taken place since 1989 when a transition from a centrally planned to a market economy started.

"Bulgarian" model for agrarian reformation and institutional modernization has a number of specific characteristics:

First, *a specific form for privatization of agricultural lands and a gradual removal of restrictions for acquisition and management of farmland.*

The 1991 Law for Ownership and Use of Agricultural Lands (known as Land Law) restored private rights of ownership on agricultural lands pulled into cooperative and state farms or otherwise nationalized after 1946[19]. Rights on farmlands have been restored to all previous owners - individuals, legal entities, schools, Church, and municipalities. After the essential 1992 amendment of the Land Law restitution of land is made only in real boundaries - historical real borders (if they exist or could be easily recovered) or in new comparable real borders in the original locations of land plots.

Modifications of the Land Law in 1993 removed existing restrictions for the maximum size for compensation of landowners[20]. The 1998 amendments of the Law made it possible for juridical person with foreign capital to acquire ownership on agricultural lands. Since January 2007 an ownership on agricultural lands can be taken by physical and juridical persons from countries of the European Union and the Agreement on the European Economic Area.

The restitution of private rights on agricultural lands was an unprecedented and complex process. It affected more than 85% of agricultural lands in the country turning three-quarters of households into land owners [MAF]. More than 1,7 million claims for

[19] Until the end of Communist period (1989) most part of agricultural activity was carried out in a small number of large public farms - cooperatives, state farms, agro-industrial complexes etc.

[20] 30 ha in North-Eastern "Dobrudja" region, and 20 ha for the rest of the country.

restoration of farmlands were processed with an average size per claimant 2,7 ha for property usually situated in a number of different locations. Eighty six percent of the claims were made by heirs of previous owners who (according to Inheritance Law) get equal shares in the restituted farmland. Thus acquired “new” private rights on lands affected several millions plots in many instances smaller than 0,1 ha.

The process of land restoration continued almost 10 years due to frequent changes in legislation, technical difficulties associated with identification and practical allocation of lands, a great number of disputes and complicated procedures for resolution, insufficient funding for land surveys and preparation of land division plans, little competence and existing corruption in some Land Commissions etc. [Bachev 2000]. Besides, most new owners were not eager to get land titles since the lack of interests in farming or a strategy to prolong a 5 year tax holiday period after full restitution of land rights.

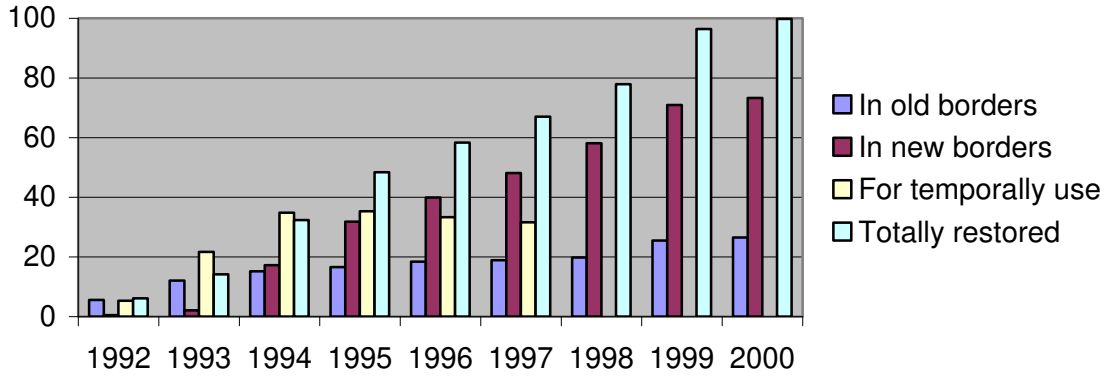
By 1994 most claimants got recognized their rights on farmland and had it restituted in so called “ideal borders”. Owners were able to get up to 90% of declared land for temporary (one season) use before land reallocation is entirely finished. Until the middle of 1999 merely a quarter of owners restored full rights (with notaries acts) on their land predominately in "old real boundaries" and mountainous and semi-mountainous regions of the country.

The 1999 amendment of the Land Law ruled for the decisions and sketch plans of Land Commissions to act as juridical documents for ownership. Consequently, by the end of that year the restitution of almost all agricultural lands were completed (Figure 8).

The Land Lease Law was passed in 1996 with aim to facilitate the effective transfer of farmland management. Its 1999 amendments removed existing restrictions for the size of leased land (maximum 600 ha for individual tenants) and for the period of lease contract (between 4 and 50 years). Besides, transfers of ownership and user rights on agricultural lands were not taxed in order to promote the evolution of farmland markets.

Second, *implementation of a specific form for reorganization and privatization of former farming structure.*

The 1991 Land Law ruled out for all non-land assets of ancient cooperative farms and other organizations established on their bases to be distributed into individual shares between members and workers of these organizations. In accordance with the important 1992 amendments of the Law all old cooperatives and other organizations established on their bases have been liquidated and their assets transferred to eligible share-holders.



Source: National Statistical Institute

Figure 8. Restitution of agricultural land in Bulgaria (% of land subject to restoration)

Most of divisible cooperative assets (livestock, equipment, fruit trees, vineyards etc.) have been physically distributed among the eligible shareholders. A great part of machinery and buildings have been sold out on internal auctions while the remaining portion of individual shares (predominately passive assets) transferred to the new emerging cooperatives. Initially a significant amount of farmland had been cultivated in "organizations under liquidation" (Table 4). However, by 1995 the management of all agrarian activity was transferred to newly evolving private structures.

The liquidation of ancient cooperative structures took more than 4 years as for some individual assets the final distribution was not completed until recently. In most cases the reorganization has been associated with large direct costs (for identification, allocation, disputing), enormous physical distortion of cooperative assets, mismanagement of production process, and unfair allocation of individual shares [Bachev 2000].

The 1992 Law for Transformation and Privatization of State and Municipal Enterprises launched privatization of state farms and agri-firms. Most agrarian assets have been sold through actions (public tenders), contests (competitive selection) or direct negotiations, while in some instances buyer has been the managers or workers teams of these organizations. The majority of agrarian enterprises were privatized during the period 1996-2000 (Table 1). Nevertheless, implementation of the Government program for overall privatization continued until recently[21].

Following the 2001 Water Users Associations Act a process for privatization and demonopolization of the state company "Irrigation Systems" started and its assets

[21] The process of privatization is still incomplete for some assets.

transferred to newly evolving Water user associations. Around 70 associations have been formally registered servicing 30% of the total equipped for irrigation area [MAF]. Expected "boom" in efficiency from collective management of irrigation has not materialized because of semi-monopoly situation (terms, pricing) of regional water suppliers, few incentives for water users to innovate facilities and expand irrigation, and uncompleted privatization of state assets [Bachev 2010].

Table 4. Pace of privatization of ancient agrarian structures in Bulgaria

Year	Organizations under liquidation		State farms and agri-firms	
	Number	Share in cultivated land (%)	Number	Share in cultivated land (%)
1992	2101	-	-	-
1993	1166	42.2	1340	8.6
1994	500	18.1	1251	7.9
1995	157	0	1002	7.2
1996	0	0	488	5.4
1997			475	5.3
1998			308	5.7
1999			311	3.6
2000			232	1.7

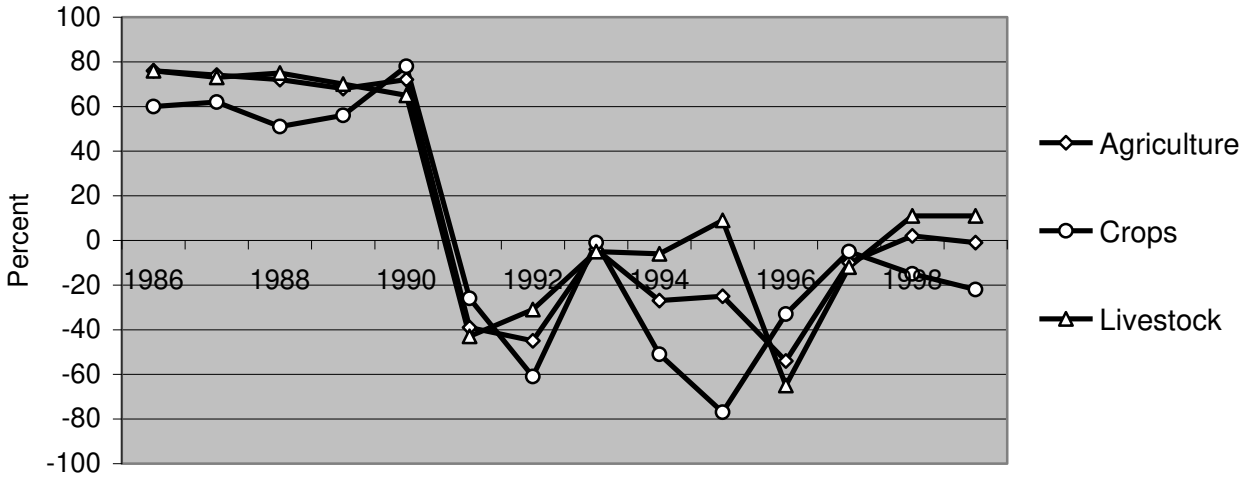
Source: National Statistical Institute

Privatization of some state agrarian property has been slow because of the problems with the identification and separation of state property, the excessive debt of some companies, the existing opposition of various interests parties in rapid completion of the process etc. The privatization and restructuring of state companies have been associated with ineffective organization of activity, bad management and corruption, and in certain cases with formation of new (quasi)monopolies concentrating critical assets and services.

Third, *a lack of efficient system for public support to agriculture.*

Transitional Bulgarian farming was one of the least supported in Europe. Until 2000 the public aid was mainly in the form of preferential short-term credit for grain producers and insignificant support to capital investments. There were also sporadic inefficient

measures to support producers through price guarantees and foreign trade regimes [OECD]. Besides agricultural income, farmland, and cooperative transactions with members have not been taxed during transition now. Nevertheless, the Aggregate Support to Agriculture was close to zero and even negative until 2000 (Figure 9).



Source: OECD, 2000

Figure 9. Aggregate Producer Support Estimate in Bulgarian agriculture

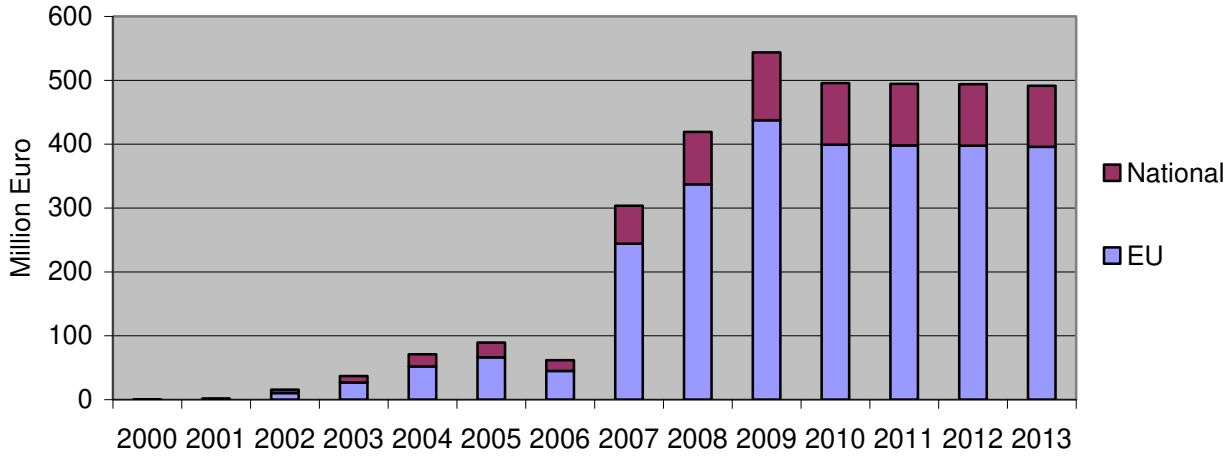
There has been a considerable progress in public support to agrarian sector since 2000 in form of current and investment subsidies, preferential credits, minimum price guarantee etc. However, most public aid before 2007 EU accession affected cereals and tobacco producers, and the overall support to farms were very low.

For instance, EU Special Pre-accession Program for Agrarian and Rural Development (SAPARD)'s investments and subsidies in the Gross Value Added (GVA) were 3,6% and 1,8% accordingly [Bachev 2007]. At the same time, portions of the State Fund Agriculture (SFA)'s investment credit in the GVA were 0,4% while short-term (credits and subsidies) support in Gross Agricultural Product was 0,8%.

Besides, only a small proportion of farms benefits from some form of public assistance most of them being large enterprises in most developed regions of the country. For example, SAPARD supported merely 7,7% of the agro-firms, 2,3% of the cooperatives, and 0,1% of the unregistered farms.

Since 2007 there are huge EU and national funds to support agriculture (Figure 10). EU financial support goes for "agrarian and rural development" (€733 million), "area based direct payments" (722 million), and "market support" (€388 million) [MAF]. In addition,

Bulgarian agriculture receives considerable funding from the EU Structural Funds and top-ups from the national budget.



Source: Ministry of Agriculture and Food

Figure 10. Public funding for Agrarian and Rural Development in Bulgaria[22]

However, public assistance continues to benefit unevenly different farms as bulk of subsidies goes to few farms - the larger operators specialized in field crops (Table 5). Less than 16% of all farms get EU Area Based Payments and around 13% of them receive national top-ups [MAF]. Registered beneficiaries of direct payments with farm's size bigger than 1000 ha are only 13% but they obtain support for more than 54% of totally subsidized farmland in this group. Similarly, unregistered beneficiaries with farm size smaller than 5 ha are more than 60% but they get payments for merely 9% of supported area in the group.

Furthermore, due to mismanagement and corruption SAPARD (along with other EU funds) was suspended by the EC in 2008, and a considerable EU funding under that scheme lost. What is more, the progress in implementation of National Plan for Agrarian and Rural Development (NPARD) has been very slow[23] due to the lack of awareness and experiences, poor design and restricting criteria, complicated and costly procedures, and enormous mismanagement and corruption [Bachev 2010].

[22] Actual funding for 2000-2006 and planed funding for 2007-2013.

[23] By the end of 2009 only 7,54% of the funds for 2007-2013 NPARD were effectively utilized in 6 out of 22 approved measures [MAF].

Table 5. Share of EU and national support in Net Income of different Bulgarian farms in 2008 (percent)

Type of farm	Share of subsidies in farms Net Income	
	Current subsidies	***Investment subsidies***
Field crops	63.2	2.1
Horticulture	1.3	1.8
Permanent crops	0.4	2.2
Livestock	0.3	0

Source: MAF Agro-statistics

In the last few years before EU accession, country's laws and standards were harmonized with the immense EU legislation[24]. The Community Acquis have introduced a modern framework for agrarian governance including new rights, rules and restrictions, strict public regulations, and effective control and support measures. Nevertheless, there is not enough readiness for an effective implementation of the new public order because of the lack of experience in agents, adequate administrative capacity, and/or practical possibility for enforcement of novel norms (lack of comprehension, funding, deficient court system, widespread corruption etc.).

What is more, modern public institutions and infrastructure crucial for farming development have not been built in the country: public system for enforcement of laws, regulations, and contracts does not work well; essential property rights (on environmental resources and biodiversity, special and organic products, intellectual agrarian property etc.) are not well defined or enforced; public support programs are rarely governed effectively and in the best interest of legitimate beneficiaries; newly established agricultural advisory system does not serve the majority of farms; urgently needed public system for agrarian insurance has not been introduced; crucial agrarian and rural infrastructure (wholesale markets, irrigation, roads, communication technologies) has not been modernized; public support for initiating and developing farming associations has not been given; multifunctional role of agriculture has not been recognized and supported etc.

Furthermore, there have been a great number of bad government (under and over) interventions in agrarian sphere during the transition now which affected adversely development of new farming structures [Bachev, 2010].

[24] The Acquis Communitaire adapted before EU accession (January 1, 2007) contains 26000 pieces of legislation accounting for 80000 pages.

Chapter 8

2. EVOLUTION OF NEW FARM STRUCTURES

Privatization of agrarian resources has contributed to a rapid development of private farming in the country. There emerged more than 1,7 million private farms of different type after 1990 (Table 6).

Majority of newly evolved farms are *unregistered farms* (Physical persons). They concentrate the main portion of agricultural employment and key productions like livestock, vegetables, fruits, grape etc. (Table 7).

Unregistered farms are predominately *subsistence, semi-market* and *small-scale commercial* holdings. According to the official data the farms smaller than 2 European Size Unit (ESU)[25] comprise the major share of all farms in main agricultural subsectors (Figure 11). What is more, in livestock activities they account for the bulk of the Standard Gross Margin (SGM) in related subsectors.

Agrarian reform has turned most households into owners of farmland, livestock, equipment etc. An *internal organization* of available household resources in an own farm has been an effective way to overcome a great institutional and economic uncertainty, protect private rights and benefit from owed resources, and minimize costs of transacting [Bachev 2000].

During transition, market or contract trade of much of household capital (land, labor, money) was either impossible or very expensive due to: unspecified or completely privatized rights, "over-supply" of resources (farmland, unemployed labor), "missing" markets, high uncertainty and risk, asymmetry of information, enormous opportunism in time of hardship, little job opportunities and security etc. Running up an own farm has been the most effective (or only feasible) mode for productive use of available resources (free labor, land, technological know-how), providing full and part-time employment or

[25] 1 ECU=1200 Euro. According to the EU classification farms with a size of 2-4 ESU are considered as "semi-market farms". The actual number of subsistence and semi-subsistence farms is unknown since many of them are not covered by the Agricultural Census.

favorable occupation for family members, and securing income and effective (cheap, safe, sustainable) food supply for individual households.

Table 6. Evolution and importance of different type farms in Bulgaria

	Public farms	Unregistered	Cooperatives	Agro-firms	Total
Number of farms					
1995	1002	1772000	2623	2200	1777000
2000	232	755300	3125	2275	760700
2005		515300	1525	3704	520529
2007		458617	1281	5186	465084
Share in number (%)					
1995		99.7	0.1	0.1	100
2000		99.3	0.4	0.3	100
2005		99.0	0.3	0.7	100
2007		98.6	0.3	1.1	100
Share in farmland (%)					
1995	7.2	43.1	37.8	11.9	100
2000	1.7	19.4	60.6	18.4	100
2005		33.5	32.6	33.8	100
2007		32.2	24.7	43.1	100
Average size (ha)					
1995	338.3	1.3	800	300	2.8
2000	357.7	0.9	709.9	296.7	4.7
2005		1.8	584.1	249.4	5.2
2007		2.2	613.3	364.4	6.8

Source: National Statistical Institute and Ministry of Agriculture and Food

Specialization or diversification into small-scale farming has taken place [Bachev 2008], and even now the agriculture is an “additional source of income” for one out of 7 Bulgarians [MAF].

Management of the small-scale farms is not associated with significant costs. They are mainly *individual* or *family holdings*, and farm size is exclusively determined by household resources – family labor, own farmland and finance. Internal governing costs are non-existent (one-person farm) or insignificant because the coalition is between family

members (common goals, high confidence, and no cheating behavior dominate). Farmers have strong incentives to increase efficiency adapting to internal or market demand, intensifying work, investing in human capital etc. since they own the whole residuals (income).

Table 7. Share of different type farms in all holdings, agrarian resources and productions in Bulgaria

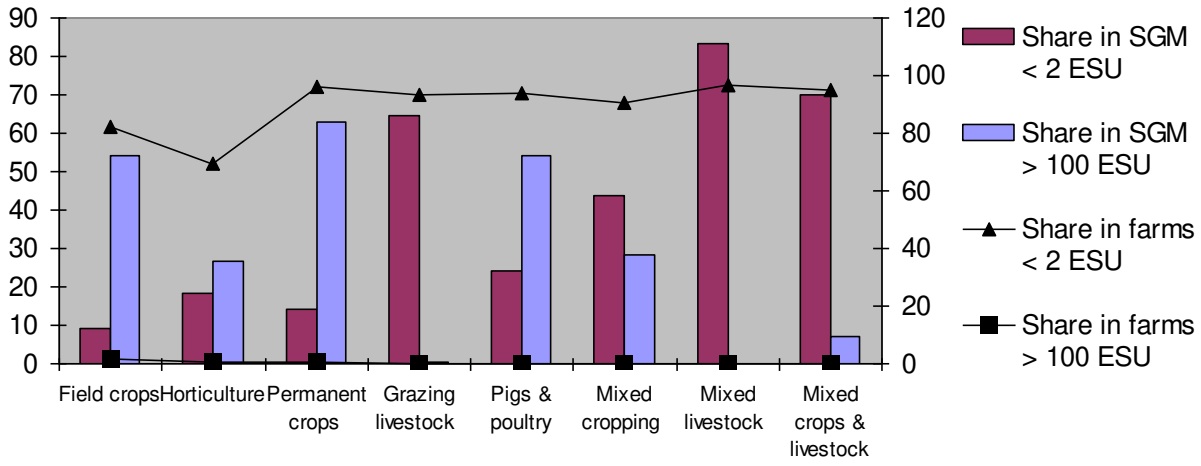
Indicators	Physical persons	Coope-ratives	Sole traders	Com-panies	Associ-ations
Number of holdings with Utilized Agricultural Area (UAA) (%)	99.0	0.3	0.4	0.2	0.05
Utilized agricultural area (%)	30.3	40.3	11.7	16.1	1.6
Average size (ha)	1.4	592.6	118.8	352.5	126.2
Number of breeders without UAA (%)	96.1	0.2	1.9	1.7	0.1
Workforce (%)	95.5	1.2	0.8	1.4	0.3
Labor input (%)	91.1	4.1	1.4	2.8	0.6
Cereals (%)	26.6	41.8	13.0	17.3	1.3
Industrial crops (%)	20.5	45.1	14.2	18.6	1.6
Fresh vegetables (%)	86.4	4.4	4.2	4.6	0.4
Orchards and vineyards (%)	52.3	29.5	2.9	10.7	4.6
Cattle (%)	90.2	5.1	1.5	2.5	0.7
Sheep (%)	96.0	1.4	0.8	1.0	0.8
Pigs (%)	60.3	1.4	7.0	30.5	0.8
Poultry (%)	56.5	0.2	13.3	29.3	0.7

Source: MAF, Agricultural Holdings Census in Bulgaria'2003

Nevertheless, there has been a constant decrease in the number of unregistered farms as a result of labor exodus (competition with other farms or industries, retirement, emigration), organizational modernization (change in type of enterprises), increasing market competition (massive failures and take-overs), and impossibility to adapt to new institutional requirements (standards) for safety, quality, environmental preservation, animal welfare etc.

More than 3000 new *production cooperatives* emerged during and after liquidation of ancient "cooperative" structures in 1990s (Table 6). They have been the biggest farms in

terms of land management concentrating a major part of cereals, oil and forage crops, and key services to members and rural population (Table 7).



Source: Ministry of Agriculture and Food

Figure 11. Share of farms with SGM smaller than 2 ESU and bigger than 100 ESU in total SGM and farms with different specialization (percent)

The cooperative has been the *single* effective form for farming organization in the absence of settled rights on main agrarian resources and/or inherited high interdependence of available assets (restituted farmland, acquired individual shares in the actives of old cooperatives, narrow specialization of labor) [Bachev 2000].

After 1990 more than 2 millions Bulgarians have got individual stakes in the assets of liquidated ancient public farms. In addition to their small size, a great part of these shares have been in indivisible assets (large machinery, buildings, processing and irrigation facilities). Therefore, new owners have had no alternative but liquidate (through sales, consumption, distortion) or keep these assets as a joint (cooperative) ownership. In many cases, the ownership rights on farmland was restituted with adjoined fruit trees and vineyards, and much of the activities (e.g. mechanization, plant protection, irrigation) could be practically executed solely in cooperation.

Most “new” landowners happened to live away from rural areas, have other business, be old of age, or possess no skills or capital to start own farms. In the absence of a big demand for farmlands and/or confidence in emerging private farming during first years of transition, more than 40% of the new owners pulled their land and assets in the new production cooperatives.

Moreover, most cooperatives have developed along with the new small-scale and subsistent farming. Namely, “non-for-profit” character and strong member (rather than market) orientation have attracted the membership of many households. In transitional conditions of undeveloped markets, high inflation, and big unemployment, the production cooperative has been perceived as an effective (cheap, stable) form for supply of highly specific to individual farms inputs and services (e.g. production of feed for animals; mechanization of major operations; storage, processing, and marketing of farm output) and/or food for households consumption.

The cooperative rather than other formal collective (e.g. firm) form has been mostly preferred. Cooperatives have been initiated by older generation entrepreneurs and a long-term “cooperative” tradition from the communist period has a role to play. Besides, this mode allows individuals an easy and low costs entree and exit from the coalition, and preservation of full control on a major resource (such as farmland), and “democratic” participation in and control on management (“one member-one vote” principle).

In addition, the cooperative form gives some important tax advantages such as tax exemption on sale transactions with individual members and on received rent in kind. Also for coops there are legal possibilities for organization of transactions not legitimate for other modes such as credit supply, marketing, and lobbying at a nation-wide scale[26].

Relatively bigger operational size gives cooperatives a great opportunity for efficient use of labor (teamwork, internal division and specialization of work), farmland (cultivation in big consolidated plots, effective crop rotation, environment protection), and material assets (exploration of economies of scale and scope on large machinery etc.).

In addition, cooperatives have a superior potential to minimize market uncertainty (dependency) and increase marketing efficiency (“risk pooling”, advertisement, storing, integration into processing and direct marketing); and organize some critical transactions (better access to commercial credit and public programs; stronger negotiating positions in input supply and marketing deals; facilitate land consolidation through simultaneous lease-in and lease-out contracts; introduce technological innovations; effective environmental management); and invest in intangible capital (good reputation, own labels, brand names) etc.

In a situation of “missing markets” in rural areas, the cooperative mode is also the single form for organization of certain important activity such as bakery, processing, retail trade, recreation etc.

[26] Forbidden for business firms by the Double-taxation and Antimonopoly Laws.

The cooperative activity is not difficult to manage since internal (members) demand for output and services is known and “marketing” secured (“commissioned”) beforehand. In addition, cooperatives concentrate on few highly standardized (mass) products (such as wheat, sunflower etc.) with a stable market and high profitability.

Furthermore, the cooperative applies low costs long-term lease for the effective land supply from members. Output-based payment of labor is common which restrict opportunism and minimize internal transaction costs.

Besides, cooperatives provide employment for members who otherwise would have no other job opportunities - housewives, pre- and retired persons. Moreover, they are preferable employer since they offer a higher job security, social and pension payments, paid day-offs and annual holidays, opportunity for professional (including career) development.

Giving the considerable transacting benefits most cooperative members accept a lower (than market) return on their resources - lower wages, inferior or no rent for land and dividends for shares.

There have been some adjustments in cooperatives size, memberships, and production structure. A small number of coops have moved toward a “business like” (popularly known as “new generation cooperative”) governance applying market orientation, profit-making goals, close and small-membership policy, complex joint-ventures with other organizations etc. That has been a result of overtaking the cooperatives management by younger entrepreneurs, improving the governance, taking advantage from new market opportunities and public support programs, and establishing of some of coops as key regional players.

Besides, some cooperatives have benefited significantly from the available new public support (product or area based subsidies), and the comparative advantages to initiate, coordinate and carry out certain (environmental, rural development etc.) projects requiring large collective actions.

At the same time, many cooperatives have shown certain *disadvantages* as a form for farm organization. A big membership of the coalition (averaging 240 members per coop) makes individual and collective control on the coop’s management very difficult and costly. That gives a great possibility for mismanagement and/or let using cooperatives in the best interests of managers or groups around them (on-job consumption, unprofitable for members’ deals, transfer of profit and property, corruption)[27].

[27] The latter has been “assisted” by the lack of any (outside) public control on the cooperative’s activity.

What is more, majority of the new cooperatives did not overcome the incentive problems associated with the collective team working in the old public farms - over employment, equalized remuneration, authoritarian management, adverse feeling towards private farming, system of personal plots etc. [Bachev 2006].

Furthermore, there are differences in the investment preferences of diverse members (old-younger; working-non-working; large-small shareholders) due to non-tradable character of cooperative shares (so called “horizon problem”). While working and younger members are interested in long-term investments and growth of salaries, income in kind, other on-job benefits, the older and not working members favor higher current gains (income, land rent, dividend).

Given the fact that most cooperative members in the country are small shareholders, and older in (pre-retired and retired) age, and non-permanent employees, the incentives for long-term investment for land improvement and renovation of outdated and physically amortized machinery, buildings, orchards, vineyards etc. have been very low.

Finally, many cooperatives fall short in adapting to diversified (service) needs of members, and evolving market demand and growing competition. For all these reasons, the economic performance of production cooperatives has not been good. Accordingly, the efficiency of cooperatives has diminished considerably in relation to other modes of organization (market, contract, partnership etc.). Many landlords have pooled out their land from the cooperatives since property rights on farmland were definitely restored in 2000. Consequently, a significant reduction of cooperative activity has taken place and a big amount of cooperatives ceased to exist in recent years.

There has been a “boom” in creation of different type *agri-firms* after 1990 as their number and importance have augmented enormously (Table 6). They account for a tinny portion of all farms but concentrate a significant part of UAA, material assets, major productions and significant portion of the SGM of cereals, industrial crops, orchards, poultry and swine (Table 7, Figure 11).

Business farms are commonly *large specialized enterprises*. Most of them have been set up as *family* and *partnership* organization during first years of transition by younger generation entrepreneurs - former managers (specialists) of public farms, individuals with high business spirit and know-how etc.

Majority of these farms are formally registered as *Sole Traders*. In addition, some state farms and agri-firms have been taken over by former managers and teams and registered as *Shareholdings* (Companies, Associations). Furthermore, different sort of *joint ventures* with non-agrarian and foreign capital increasingly appear as well.

The specific management skills and the “social” status as well as the combination and complementarities of partner’s assets (technological knowledge, business and other ties, available resources) have let a rapid extension of business farms through enormous concentration of (management of, ownership on) resources, and exploration of economies of scale and scope, and modernization of enterprises [Bachev 2000].

The specific mode and the pace of privatization of agrarian resources have facilitated a fast consolidation of the fragmented land ownership and agrarian assets in the large farms. During the long period of institutional and market transformation (unsettled rights on resources, imperfect regulations, huge uncertainty and instability) the personal relations and “quasi” or entirely integrated modes have been extensively used to overcome transaction difficulties.

Furthermore, the large operational size of these enterprises gives enormous possibilities to explore technological opportunities (consolidation of land, economies of scale and scope on machineries, cheap and standardized produce etc.) and achieve a high productivity. Business farms have been constantly extending their share in managed agrarian (and related) resources taking over smaller farms, incorporating new types of activities, and applying new organizational schemes.

Business farms are strongly *market* and *profit-oriented* organizations. Farmer(s) have great incentives to adapt to market demand and institutional restrictions investing in farm specific (human, material, intangible) capital because they are sole owners of residual rights (benefits). The owners are commonly family members or close partners, and the internal transaction costs for coordination, decision making, and motivation are not high. Increased number of the coalition (partnership) gives additional opportunity for internal division of labor and profiting from specialization – e.g. full-time engagement in production management, technological development, market and “public” relations, paper works, keeping up with changes in laws and standards etc.

Their large size and reputation make business farms a preferable partner in inputs supply and marketing deals. Besides, these farms have a giant negotiating power and effective (economic, political) mechanisms to dominate markets and enforce contracts. They also possess a great potential to collect market and regulatory information, search best partners, promote products, adjust to new market demand and institutional requirements, use outside experts, prepare business and public projects, meet formal (quantity, quality, collateral) requirements, “arrange” public support, bear risk and costs of failures.

In addition, business farms effectively explore economies of scale and scope on production *and* management - e.g. “package” arrangement of outside funding for many projects; interlinking inputs supply with know-how supply, crediting, marketing etc.

Furthermore, large farms have strong incentives and potential for innovation – available resources to test, adapt, buy, and introduce new methods, technologies, varieties; possibility to hire leading (national, international) experts and arrange direct supply from consulting companies or research institutes.

What is more, they are able to invest a considerable relation-specific capital (information, expertise, reputation, lobbying, bribing) for dealing with funding institutions, agrarian bureaucracy, and market agents at national or even at international scale.

The last but not least important, these farms have enormous political power to lobby for Government support in their best interests. All these features give considerable comparative advantages of business type of farming organization.

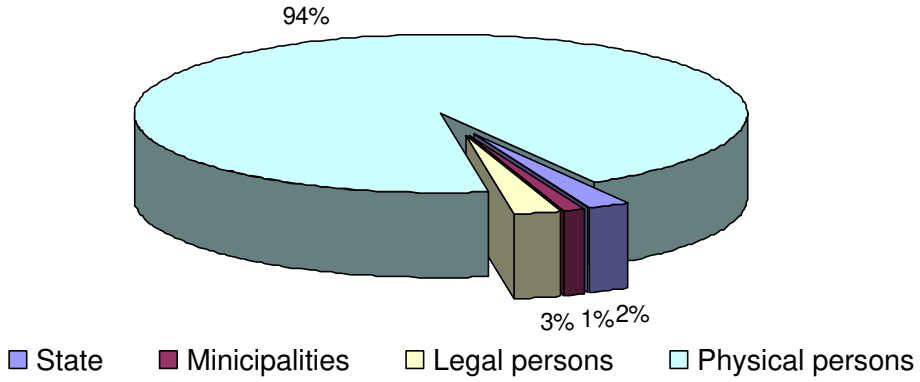
The *firm mode* is increasingly preferred since it provides considerable opportunities:

- to overcome coalition difficulties - e.g. formation of joint ventures with outside capital, dispute ownerships right through a court system etc;
- to diversify into farm related and independent businesses - trade, agro-tourism, processing etc;
- to develop firm-specific intangible capital (advertisement, reputation, brand names, public confidence) and its exploration (extension into daughter company), trade (sell, licensing), and intergeneration transfer (inheriting);
- to overcome existing institutional restrictions - e.g. for direct foreign investments in farmland, trade with cereals, vine and dairy etc;
- to have explicit rights for taking parts in particular types of transactions - e.g. export licensing, privatization deals, assistance programs etc.

Chapter 9

3. MANAGEMENT OF FARM LAND SUPPLY

According to the latest data the greatest part of the UAA in the country is owned by physical persons (Figure 12). At the same time, owner-farmed land comprises around a fifth of utilized land while the main portion of used farmland is under some sort of leased-in contracts (Figure 13).



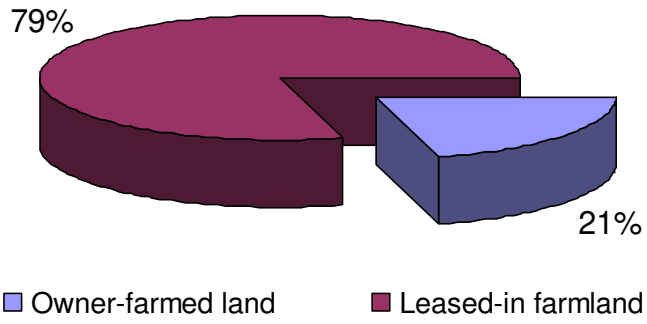
Source: MAF, Agricultural Holdings Census, 2003

Figure 12. Ownership on Utilized agricultural area

Our survey[28] has found out that there is a significant distinction in forms of land supply in different type farms (Figure 14). The *ownership* is a major governing mode for most unregistered and smaller-size farms while *leasing* is a dominant form in large agro-firms and cooperatives. There is a tendency with the enlargement of farm size to increase

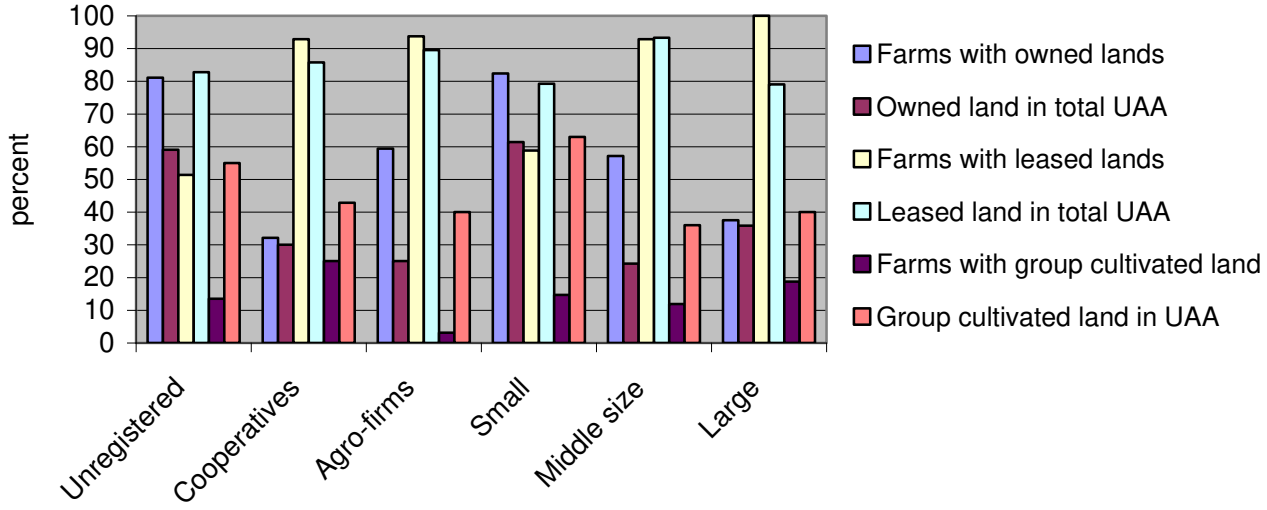
[28] Interviews with farm managers were held in the eve of the first (and the latest) post-communist 2003 Agricultural Census in Bulgaria. Survey covers 2,8 % of the cooperatives, 1,2 % of the agro-firms, and 0,3% of the unregistered farms in the country as all holdings were selected as representative for the nation's main regions.

the portion of leased land. Hence, the lease-in contract has been the main form for the extension of cultivated land in surveyed farms.



Source: MAF, Agricultural Holdings Census, 2003

Figure 13. Type of tenure of Utilized agricultural area



Source: interviews with farm managers

Figure 14. Governing of land supply in different type of farms

Group cultivation is practiced by insignificant amount of surveyed farms. Nevertheless, contract for joint cultivation of land covers a significant portion of farms applying this form of land organization. In many instances, this mode of governance is associated with a

number of advantages to intra-farm cultivation. In some cases it gives opportunity for "group" exploration of technological economies of scale and size (equipment, operations etc.) unachievable within individual farm. Very often it is combined with some transacting benefits for individual farms such as: protection of dependant assets, access to outside credit, meeting (size, membership) requirements for taking part in certain public programs, exploring economies on management and overhead (e.g. for security guards) costs etc.

Our survey demonstrates that a main form for acquisition of land property in all types farms is *"ownership restoration, inheritance, or getting as a present"*. Only a forth of surveyed farms has acquired ownership on agricultural land through "purchase" with a significant share of the larger farms participated in such transactions.

Acquisition of ownership rights (purchase of land) is an *alternative* form of land supply to lease-in contract (the later only concern the purchase of "cultivation rights"). The former mode is associated with significant capital investments (for paying land price, preparation of papers and formal registration of deals), and efforts (for finding good land plots, checking out and securing purchase provisions etc). Besides, it allows a low flexibility in optimization of farm size through reallocation of land plots and/or quick emergency sell. Despite that, it is often a preferable mode since it gives a reliable protection of long-term investments in land against possible opportunism of outside landlord (e.g. termination of lease contract before the end of the effective life-span of invested specific capital).

Our survey proves that land supply trough procurement of ownership governs transactions only if there is a condition of high mutual (or unilateral) dependency of assets with adjoint land plots. All farms applying that mode indicate using purchased land for buildings, orchard and vineyard, irrigation or other long-term amelioration of land. When there is no assets dependency and/or cite-specificity of investments to a land plot is insignificant, then either short lease or middle-term lease-in contracts are the most effective forms for extension of farm operations (less capital intensive or one season crop productions).

All surveyed farms participate either "never" or "rare" in purchase transactions for agricultural lands. It means that actual costs for land supply through a purchase contract are insignificant. Besides, more than a half of farms carry out purchase deals with "relatives", and these transactions are facilitated by close relationships, confidence, and cooperation between partners. Typical partners for the remaining farms are "non farmers". Similarly, these deals are not associated with high costs for professional farmers since: they either know (from previous lease-in contract) or easily determine the real value of traded land parcels (seller can not behave opportunistically). Furthermore, agricultural land

does not pose a special value for non-farmers, and they tend to complete deals fast according to existing market norms.

Lease-in contact is an *alternative* form of land supply to a land purchase contract. For surveyed farms, that has been a dominant form for farm extension through integration of new land plots. One of the reasons for preferences to this mode for organization has been unsettled property rights on farmland during transition now - lack of notary certificates, uncompleted land division process, disputed rights between claimants or heirs etc.

Another principal factor for domination of this form for land supply is its comparative efficiency for individual farm:

First, land lease requires less direct investment in comparison with a land purchase. Economy on capital investments has been a crucial factor for preferences to that mode in the transitional conditions of significant lack of own funding, and extremely high costs for credit financing, and absence of public programs for new land procurement[29].

Second, this form allows a greater flexibility for rapid optimization of farms size along with current market and technological changes (e.g. quick inclusion or exclusion from operation of needed land plots).

Third, this mode permits inexpensive verification ("production test") of real values of a particular land for the certain farm. Thus it restricts the risk in case of bad deals (e.g. unsuitable partners or land plots) to the period of lease contract. Forth, in some instances (e.g. mono culture) that is the best form for annual (or seasonal) supply of divers new land plots to any alternative modes of land supply and organization (purchase, exchange, group farming, and crop rotation)[30].

Finally, until recently the lease contract was one of two the legitimate ways to acquire rights on farming the land by a foreign entrepreneur[31]**.**

[29] While short-term, and recently long-term public credits are becoming available through various support programs (SFA, SAPARD, CAP measures, National Plan for Agrarian and Rural Development - NPARD), for participating in public projects there is an explicit requirement to possess needed farmland.

[30] However, widespread application of short-lease contracts have created serious problems in some regions of the country as a result of not observing crop-rotation, soil and water pollution, inadequate compensation of extracted from soil N,P and K, abandoning of large areas of productive lands etc. [Bachev 2010].

[31] Second to the joint venture with a local partner owning agricultural land.

Nonetheless, when significant farm-specific long-term investments in land are to be made (e.g. long-term improvement, permanent crops, trees, building etc.), then a special form is designed to safeguard land supply from possible opportunism of the partner – e.g. use of long-lease contract, acquisition of ownership, joint venture with the landlord etc.

Furthermore, one-third of lease-in contracts are with relatives and familiar farmers, and mainly personal (rather than anonymous market) relationships govern transacting. The later form, based on personal ties, is preferred since: it permits an efficient information exchange (in respect to demand and supply, partner's reliability), cooperation in contracting and dispute resolution, and low cost control (self-control) on obeying contractual terms. Besides, leasing business and cooperative farms are often a provider of jobs and services for landlord's households. These interlinks additionally diminishes any opportunistic behavior in land deals.

Portion of surveyed farms which sell-off land gradually increases since 1995 but it is still at a very low level of 3.3%. What is more, prevailing part of farms participates in land sells either "rare" or "not at all". Selling out cultivation rights (lease-out) is an alternative form for selling-off the land property (all "residual" rights). One of the reasons for domination of this mode has been the lack of full ownership rights on land (incomplete process of restitution or disputes over land), and therefore a practical possibility for complete trade with changing ownership titles.

Another main reason is the condition of some specificity (dependency) between temporally free land and other farm assets (adjacent plots, accomplished improvements etc.)[32]. That is why, farms tend to transfer management rights rather to lose the entire control (full ownership rights) on such agricultural lands.

The *alternative* form for leasing out of (owned) land is the *internal organization* through utilization of available land within the farm, investing additional capital, hiring additional labor etc.

The manager prefers to lease the land-out to another farm instead of organizing new operations within own farm (on available land) because of the comparative advantages of this form of governance. The internal management of a particular land plot would increase farm income, but also would be associated with augmentation of costs for management of additional transactions. For example, it would require supplementary efforts for hiring, directing, and monitoring labor; extra efforts to find working and investment capital; additional cares for protection and marketing of farm output etc. That is why, instead of internal organization the manager prefers much cheaper outside "land supply" (a lease-out

[32] In a long run, these plots are indispensable for optimization of farm size.

contract). In this case, either reduces farm size or extends farm with land saving transactions (e.g. intensive crops, livestock operations, processing, marketing etc.).

Manager's transacting costs for lease-out plots are limited to finding a partner, negotiating, and controlling contractual terms. Those are exclusively costs for managing land property rather than costs for organizing farming activity (which are actually brought by the tenant). Generally, there are economic or another incentives for preferring the form of a temporary transfer of cultivation rights in contrast with selling out the "excessive" (for a farm) land. As our surveys shows, those are the plans for farm extension in future; desire to keep up an emergency reserve from owned land; expectation for appreciation of value of a particular land plot; special ("traditional") respect to farmland, desire to keep land for future (after retirement) use or next generations.

Share of farms leasing out land has increased three times comparing to the period before 1993, and now more than one-fifth of surveyed farms are involved in such deals. Only few unregistered and small farms practice this mode for optimization of resources. Reduction of farmland through lease takes increasingly place after 1996 for 13% of cooperatives. For agro-firms, large and middle-size farms, leasing out turns to be the main form for optimization of size of cultivated farmland. Namely, these farms are highly sensitive to market signals and tend to manage their resources according to efficiency rule.

Predominant part of surveyed farms either does not take part in land lease-out transactions or they do it rarely. Solely cooperatives share, involved in this kind of deals is higher - 45%, including 22% which report doing it "frequently".

In fact the goal of a producer cooperative is to farm instead of trading (profit on) members land[33]. Nevertheless, cooperatives have a number of extra advantages in carrying (mediation of) land deals between landlords and tenants in comparison to other modes (direct trade; using of market agent or state agency). The later are mainly associated with: scale economy on lease in and out activities (information, transacting and operational costs), technical opportunity for consolidation and reallocation of land plots within large managed area, authority and power to enforce land deals etc. That new "free service" (mediation of land deals) makes production cooperatives a specific and effective mode for governing of land supply in Bulgarian conditions.

For most of the farms frequency of lease-out transactions with a particular partner is high. That is caused by the lower costs for contract renewal in comparison with new contracting; stronger incentives for self-restriction of opportunistic behavior of tenant;

[33] 2000 changes in the Cooperative Law have ruled out possibility for cooperatives to own farmland, and thus entire land supply of cooperatives comes through lease-in contracts.

opportunity to elaborate effective control and dispute resolution mechanisms etc. Nonetheless, a significant portion of lease-out contracts (43%) is with low recurrence, and it is particularly true for the cooperatives and the firms. The later farms often have other devices for preventing possible opportunism and careless utilization of land such as economic influence, strong regional authority and power, interlink transacting (e.g. land plus service supply) etc.

However, there are a number of instances, of inefficient for members' land deals at the best interests of the coops managers or related private interests (mismanagement, corruption).

Considerable share of land purchase and sell deals in surveyed farms are carried out through *"written contract"*, which in most instances is "notary legalized" or "registered in agricultural office". To a great extend the written mode and formal registration of (changes in) ownership titles are determined by the official regulations. However, preferences to a paper form are usually strong when "residual rights" on a unique resource like farmland are transferred. This form provides a long-term legal protection of rights on indispensable, "eternal", and often a highly specific to a farm asset.

Part of investigated farms report they use a "verbal agreement" as the form for accomplishing purchase and sell contracts (21% and 14% accordingly). Informal transfer of ownership presumes a high trust between partners and existence of reliable (informal) mechanisms for effective contract enforcement (e.g. family or friendship relations). In many cases, this mode assumes an unfinished (uncompleted) ownership transfer transaction. For examples, a land purchase is negotiated, but a payment is not made (due to shortage of cash, desire for a "trial" period); or actual utilization of land is undertaken, but partial payment over several years, is in place. It is not an accident that later form for ownership transfer is practiced by less stable and financially weak structures – unregistered and smaller-size farms.

A good part of land lease-in deals and a significant part of lease-out deals are governed by *"oral agreement"* between partners (28% and 45% correspondingly).

Since mutual expectations of parties are to a great extend standardized, and contract terms well-defined and understood by counterparts, there is no need for written specifications of transactions. The economic value of different land categories in a particular region is generally well known (often "officially" determined). Therefore, a standard (market) rent reflects quality variations, and technological specificity are easily negotiated (e.g. situation of land plots, accomplished improvements etc.). Specificity of investment in agricultural land is low and mostly restricted to a season (one-year crops).

Contract term is not of importance for either partner since transactions can be terminated any time (after each season) without significant loses for neither party. Agreement is reached easily and it is not difficult to enforce contract provisions (cares for land, rent payments etc.). Putting into a written form of standardized obligations has no sense, and all notary and formal registrations are only coupled with useless additional costs (for preparation, registration, disputing etc.).

Formal lease contracts are used mainly by cooperatives, firms, and bigger farms. They are put to use because of the explicit legal requirements (as in the case of cooperatives) when violation of such institutional restrictions is easily discovered by authority. However, a major reason for selecting written and formally registered contracts is existence of considerable economic advantages for this mode of organization. Our surveys proves that, those are possible direct economies for big tenants (farms, firms, cooperatives) from applying standard contracts to numerous (usual small) land owners, and avoiding individual negotiations of universal transactions.

Besides, these farms commonly practice a long-term lease and therefore realize economies form constant (annual) renewal of contracts after each season.

Next, formal contracts better safeguard pay-back of investment in leased-in land through third-party (e.g. court) enforcement of agreements and against possible early termination of contracts. The later is particularly important for large farms, which cultivate land in big and consolidated plots investing significant capital with high farm (and land) specificity.

And finally, for participation in public support programs usually there is a requirement for land ownership or a signed long-term lease contract which makes that written mode necessary.

In lease-in contracts around 43% of surveyed farms use a *"share rent"* as that portion is higher for unregistered and cooperative farms and small and middle-size farms. *"Fix-rent"* is employed by rest 30% of farms, as firms and large farms favor more that sort of rent. One-forth of farms use *"mix rent"* contract.

For all farms the major factor for rent choice is "the specific product grown on land". Next important factor for rent selection is "good/bad relations with land owner". In the rent-formation process the firms and large farms use "as a base the dominant rent in region". The small and unregistered farms fix the rent "through a concrete negotiation". Cooperatives and middle-size farms apply equally both market and negotiated rent arrangements.

In lease-out contracts unregistered farms and firms, and small and large farms give a priority to prior rent fixing. Mix form is preferred by most of cooperatives and middle-size farms. Specific product grown on land is the most important factor for rent choice in firms and cooperatives, and medium farms. Unregistered and small size farms report as the main consideration "good/bad relations with a partner". Besides, "economic stability/instability in the country" is a significant factor for all kind of farms, and the most important for the large farms. While majority of firms employ as a base the predominant rate in the region, all cooperatives and nearly all of unregistered farms form the rent through concrete negotiation.

Rent choice is important for minimization of overall cots for lease contract. When a fix rent is adopted a land owner saves the cost for controlling of tenants conscientiousness (in respect to efficiency of land use, and fair payment of negotiated share-rent). This mode also contains strong incentives for intensive exploitation of leased land since tenant keeps the entire surplus product of his efforts. On the other hand, all risk in fix-rent contract is bearded by the tenant-farmer.

Generally, in farming a great natural uncertainty (climate, diseases and pests attacks, yields) is coupled with a big economic uncertainty (level of production costs, demand, output prices). Therefore, most surveyed farms give a preference to shared or mixed-rent (some share participation in the output) in lease-in deals. As land owners (in lease-out deals) the same agents favor fixed rent due to high uncertainty associated with transactions.

In land purchase and lease in deals merely one-third of surveyed farms "usually do not have any problems". The portion of farms not confronting any problems in sell-off deals is a forth and very tiny for lease-out contracts. For dealing with transacting problems farms mostly apply "additional negotiation", "go to dispute in Court", need to "hire a lawyer", or resort to "other measures"[34].

Nevertheless, a good proportion of farms report they can "do nothing" to resolve conflicts but undertake a (cost saving) "waiting strategy". Consequently, otherwise effective deals either do not take place or are not carried out according to wishes, expectations, or agreements of parties.

The most common reasons for *size reduction* (through land sells-off or lease-out) in surveyed farms are: "lack of gain from land cultivation", "accumulation of funds for financing other activities", "impossibility to manage all owned land", and "ceasing some

[34] In some cases, those are illegal means to enforce contracts.

activities". That proves that a main factor for the reduction of scale of land supply is the high level of transaction costs for organization of farmland within the farm borders.

The management of outside deals (sell-off or lease-out contracts) is much more economical than the internal integration through hiring new workers, providing necessary finance, and organizing new activities on available lands. Farms restricting the internal land supply either minimize the farm size or extend the farm through organization of land-saving transactions (intensive crops, livestock operations, agricultural services etc.).

Land deals are not only a means for changing the farm size but also a *way for rationalization of land organization*. Resulting land concentration enhances farm efficiency since: it minimizes considerably technological expenditures (allowing effective exploration of economies of scale and scope from utilization of machinery, saving on transportation costs etc.); it leads to a significant economy on transacting costs from an effective labor direction and supervision, quality control on contacted services, lesser needs for security guards etc.; it permits farm extension since it increases the possibilities for effective organization of more internal and outside transactions under a single management.

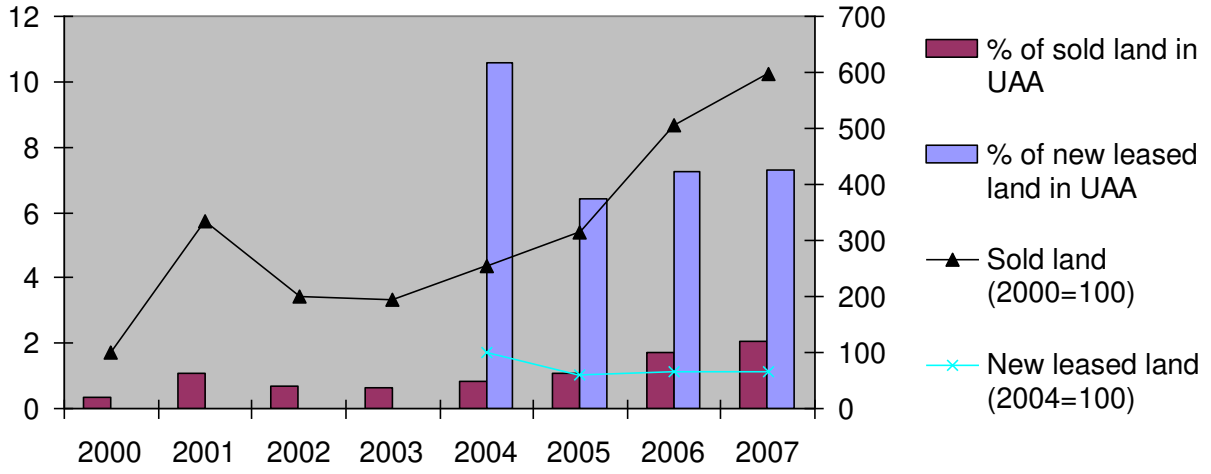
Thus in a situation of a significant portioning (scattering) of land ownership in the country the trade with rights on agricultural land has been a major way for consolidation of land plots. Our survey indicates that more than 40% of leasing-out farms simultaneously take part in lease-in transactions. Every tenth of leasing-in farms also lease-out land. Not small portion of farms applying other forms for land supply (such as purchase, sell, lease out, lease in) at the same time practice "compensating" opposite deals (sell, purchase, lease-in, lease-out).

According to most managers of surveyed farms the "contract enforcement" requires great "time and efforts" (Table 8). In addition, for the majority of large farms and agro-firms land supply contracts takes a big deal of the overall management efforts. A good part of cooperative and middle-size farms also spend significant transaction costs for "finding partners selling or leasing land".

In the last several years the sale deals with agricultural lands and the traded area increased almost 6 times (Figure 15). However, the share of sold farmland ("without changing of the agricultural use") in overall UAA is not significant. There is also a good dynamic of the number of formally registered lease contracts as the share of newly leased area overpass 10% of the UAA in some years.

Rising preference to a formal lease contract is caused by increasing efficiency of that mode of carrying out lease deals - lower cost, higher security, better enforcement, and possibility to meet markets (banks, partners) and institutional (e.g. public programs)

requirements for land supply arrangement. The formal user rights are particularly important for getting EU area-based subsidies and other public support which motivates bigger farms to accept the additional costs for preparation, registration and enforcement.



Source: Agrarian report, MAF

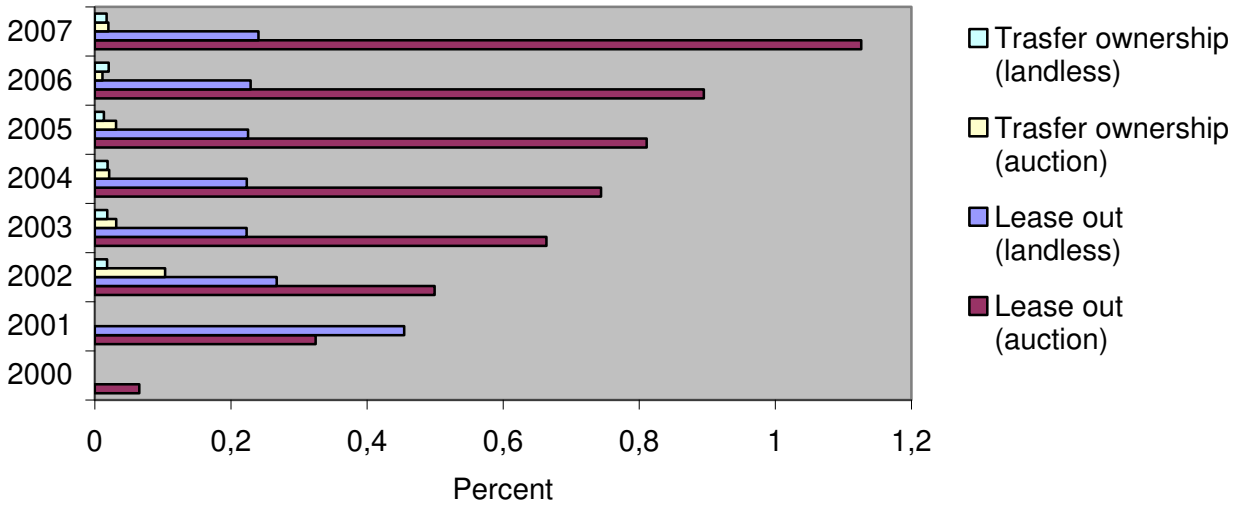
Figure 15. Trends in sale and lease contracts for farmland in Bulgaria

After 2000 the *state* participation in agricultural land market has been active though selling out, leasing out, exchanging and giving away state lands.

The state land has been mostly *lease-out* (though auctions or direct contracts for growing seasonal or permanent crops) to larger private operators (including foreign) or to landless and poor individuals[35]. To a lesser extend the state farmland has been *sold out* on auctions or *granted* to landless and poor. There has been a small amount of *exchanges* of the state with private agricultural lands aiming to consolidate farming land, concentrate lands for large investment projects, or extend land ownership related to privatized buildings.

Nevertheless, the state participation in land markets has not be significant and affected merely 1,5% of the overall UAA (Figure 16). Generally, there has not a big demand for buying state farmland while purchases and exchanges of highly valuable agricultural lands are associated with inefficiency and corruption.

[35] Using the State and municipality agricultural lands for land settlement of landless and poor individuals has been ruled out by the Land Law (1991). However, this process practically started after 2000 when land restitution was largely completed.



Source: Agrarian report, MAF

Figure 16. Share of deals with State agricultural lands in total UAA (percent)

In 2007 certain state pastures (0,6% of UAA) has been designated for *common exploitation* by livestock farms as some of them contracted to individual farms making them eligible for EU area based direct payments[36].

[36] Most small-scale livestock producers manage insufficient (for EU area based subsidies) farmlands or have no lands at all. That is why this Government intervention actually aimed to give access of small livestock producers to EU subsidies.

Table 8. Time and efforts for governing of farm transactions (percent)

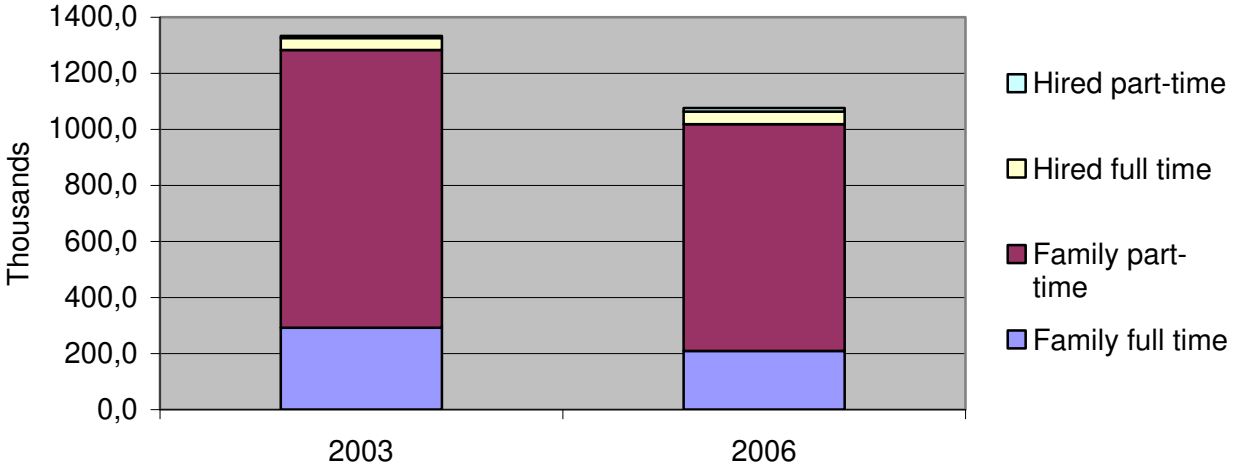
Efforts and time for:	Level	Type of farms						
		Unregistered	Cooperative	Firms	Small	Middle	Large	Total
Finding new workers	big	18,91	14,28	12,5	18,91	18,18	0	15,46
	moderate	8,10	42,85	37,5	5,40	45,45	31,25	27,83
Finding partners selling or leasing-out farmland	big	18,91	35,71	12,5	13,51	31,81	12,5	21,64
	moderate	29,72	14,28	62,5	18,91	40,90	62,5	36,08
Finding suppliers for needed materials, equipment etc.	big	24,32	21,42	50	21,62	34,09	50	31,95
	moderate	29,72	67,85	25	35,13	45,45	31,25	39,17
Finding markets for outputs	big	37,83	42,85	56,25	27,02	56,81	56,25	45,36
	moderate	13,51	35,71	28,12	27,02	20,45	31,25	24,74
Finding the rest of needed information	big	45,94	17,85	15,62	40,54	18,18	25	27,83
	moderate	10,81	21,42	40,62	8,10	31,81	37,5	23,71
Negotiating and preparing contracts	big	18,91	35,71	40,62	16,21	40,90	37,5	30,92
	moderate	27,02	21,42	37,5	21,62	27,27	50	28,86
Controlling implementation of contractual terms	big	48,64	42,85	37,5	45,94	36,36	56,25	43,29
	moderate	5,40	14,28	31,25	5,40	22,72	25	16,49
Resolving conflicts associated with quality and contracts	big	29,72	14,28	59,37	29,72	31,81	56,25	35,05
	moderate	5,40	50	21,87	16,21	31,81	18,75	23,71
Relations with banks and preparing projects for crediting	big	35,13	42,85	59,37	32,43	47,72	68,75	45,36
	moderate	8,10	42,85	37,5	5,40	45,45	31,25	16,49
Associating with registration regimes	big	18,91	17,85	15,62	18,91	18,18	12,5	17,52
	moderate	2,70	21,42	9,37	10,81	13,63	0	10,30
Relations with administration	big	24,32	10,71	18,75	21,62	15,90	18,75	18,55
	moderate	21,62	42,85	40,62	32,43	38,63	25	34,02
Relations with membership organizations	big	18,91	21,42	6,25	16,21	20,45	0	15,46
	moderate	5,40	25	43,75	2,70	40,90	25	23,71
Others	big	5,40	14,28	0	0	13,63	0	6,18
	moderate	0	0	0	0	0	0	0

Source: interviews with farm managers

4. MANAGEMENT OF FARM LABOR SUPPLY

Family labor is the major form of labor supply in Bulgarian farms (Figure 17). Nevertheless, there is an increase in number and share of *hired labor* in recent years.

Furthermore, fully employed is only a quarter of family labor and there is a tendency for enlargement of the share of part-time family workers. On the other hand, the hired labor is predominately for *full time* employment with a rising portion of *part-time contracts* in last years. *Seasonal workers* are typical for agriculture and their stake is Annual Work Units increased from just over 3% in 2003 to almost 5% in 2007 [MAF].



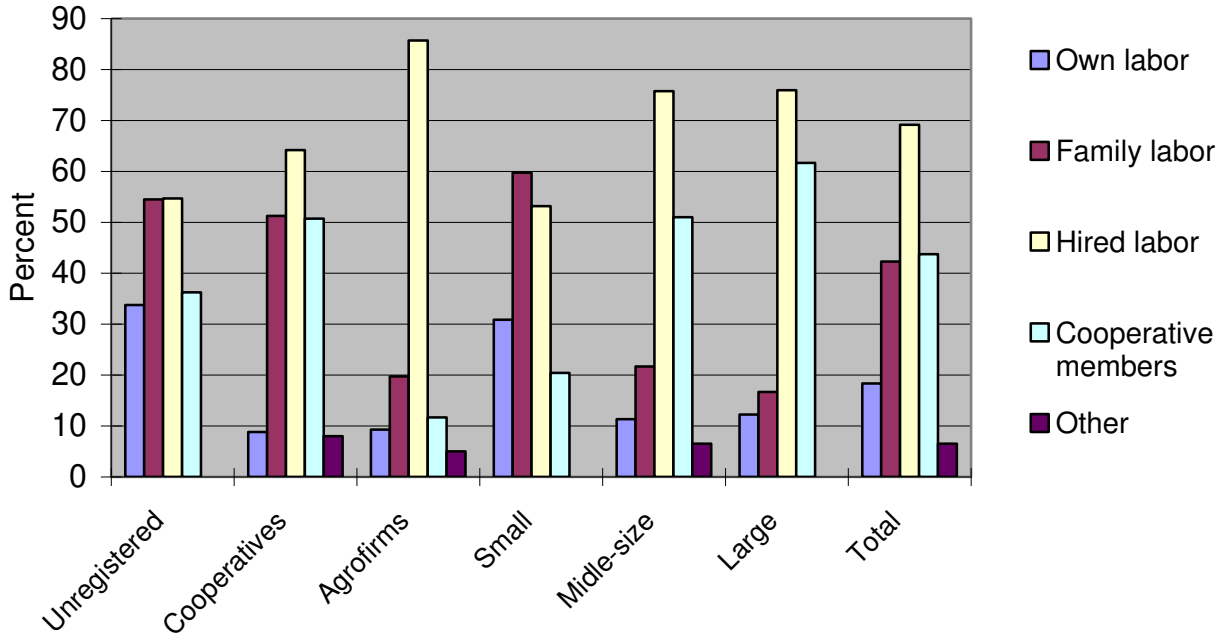
Source: Agrarian Report, MAF

Figure 17. Number of labor force in Bulgarian agriculture

Our survey of farms has found out that different type of farms employ unlike modes for labor supply.

More than 40% of surveyed farms use *own* and *family* labor as share of non-cooperative farms in that type of employment is particularly big. The greatest part of agro-firms and farms rely on own labor (self-employment) while most of unregistered and

relatively smaller farms apply family labor. The share of own labor in overall workforce of farm is largest for unregistered and smaller farms (Figure 18). Family labor also accounts for a considerable portion of average workforce in all farms its part being especially big in employing family labor small, unregistered and cooperative farms.



Source: interviews with farm managers

Figure 18. Share of different type of labor in average annual workforce of farms

Farm efficiency to a great extend depends on quality and timely implementation of "critical" operations such as sawing; watering; spreading chemicals and pesticides; protecting, harvesting and marketing of farm output etc. At the same time, high uncertainty and dependence from climatic factors make it very difficult to verify relationship between individual contribution and final output.

Since individual role (in team production) is often impossible to estimate and a permanent control of labor (not rare in large geographical areas) is extremely expensive, own labor or low-cost family labor is generally used for farm critical operations. Therefore, utilization of family labor is the major form for governing of labor supply in most of the farms.

Family labor has significant advantages comparing to both outside supply of labor (service supply contract), and internal organization of hired labor (market based employment contract). Family members are unified by common business and family

interests. That creates strong incentives for cooperation in decision making, reviling complete information, conflict resolution, and self-controlling opportunistic behavior. That is why the effective limits for farm extension through labor supply are mostly determined by possibility to carry out critical operations by own or family labor [Bachev 2004].

For instance, the potential for farm enlargement mainly depends on managerial capital of the owner/manager and his personal capacity to control additional internal (hired labor) and external (contacting services, marketing etc.) transactions. In fact, the level of that managerial skill creates an additional rent which could be explored though internal organization of transactions[37]. Namely that differentiation of managerial capital explains why in the same farming industries exists so big variation of farm sizes [Bachev 2004].

Employment of *cooperative members* is a major form for labor supply only for most of the cooperatives as 64% of them apply that mode. That is logical since majority of that production organizations exist in order to provide employment for their members. More than a half of the overall workforce in these farms is of cooperative members. On the other hand, only 11% of unregistered farms use cooperative labor but the share of this type of labor supply is quite significant in the average annual workforce of there farms.

Cooperative labor contains additional incentives for intra-farm realization since it participates in (share) ownership, management, and finale distribution of non-human assets. All these advantages of cooperation could be exploited only if it is possible an effective mutual control of activity and there are low-cost mechanisms to link individual contribution to overall (final) results of the team work. That mode of *labor coalition* is especially effective when the number of the members of cooperative (group farm) is not very big and most of them are working-owners in the coalition [Bachev 2004].

Hiring (employment) contracts are broadly used form for labor supply in surveyed farms. Since possibilities for farm enlargement through own and family labor are usually (naturally) restricted an additional labor is hired (from market). A big part of surveyed farms organize labor supply through that mode - almost 68% of unregistered and small farms, more than 85% of cooperatives and middle size farms, more than 90% of firms, and all of the large farms. Moreover, the hired labor accounts for a significant share in the workforce of hiring farms.

Internal labor contract is an *alternative* form for farm extension to *outside (market) contract for service supply*. That mode possesses a number of transacting advantages such as: economy of costs for multiple negotiations and detailed specification of

[37] Otherwise, farmer would sell his standardized labor on market (instead of self-employing in own farm) and will get the normal price for labor.

obligations; protecting transactions from possible opportunism in critical (labor demanding) moments; opportunity for effective investment in farm specific human capital etc. That mode for farm enlargement is often preferred because of undeveloped (missing or unstable) market for agrarian services, or the high potential for profiting on internally organized specific human capital (learning by doing experience, training etc.).

In many instances, the outside employment of labor comes to be an *alternative for outside supply of agrarian inputs* – e.g. buying instead of producing feed for animals, buying machinery and "replacing labor" etc. A main reason for the selecting that form for transacting is again the relative costs. In some cases, that is the "impossibility" to find a reliable supplier, or the high risk from strong dependency of farm from outside providers (e.g. forage supply for animals), or the necessity for finding "expensive" credit for market procurement of inputs etc.

In other instances, grounds for choosing the internal mode is the availability of needed non-human assets (e.g. land, machinery) for intra-farm organization of transactions or existence of strong interdependence (specificity) of different farm assets requiring an integration.

Finally, outside labor supply is an *alternative for lease-out contract of available (owned, rented etc.) land*[38]. In this case the farm size is reduced through (partial or full) transfer of land management to another farm entrepreneur.

Permanent employment is the main form for labor organization in all type of farms – around 80% of unregistered farms, and almost all cooperatives and firms apply that mode of labor supply.

The permanent (labor) contract with a specific farm assumes a high frequency of transactions between a farm entrepreneur and a worker throughout the year. It allows realization of considerable economies on governing of labor supply. Instead of negotiating each particular activity (a service supply contract, "daily" hiring etc) the manager and the worker sign a permanent employment contract. In that way both sides save costs for permanent (re)negotiations, and the farmer economizes on efforts to find "good" workers, for testing labor's skills and reliability etc.

Besides, a high recurrence of transacting between the same parties (a permanent contact) let develop "good" relationships between partners (getting to know each other, mutual efforts to avoid or overcome conflicts etc.), and creates incentives to invest in farm specific human capital (getting knowledge about quality of different land plots, learning the

[38] Namely that relationship (between *labor* supply and *land* supply); and incentives, costs minimizing, and risk bearing futures of alternative forms of *land tenure* has been commonly studied by traditional agrarian economy [Eswaran and Kotwal].

technology for specific products on farm, intimate acquaintance with individual animals etc.).

The permanent employment also allows avoiding the risk of uncertainty in labor market (e.g. shortage of highly qualified labor) which is significant in agriculture in some activities and (pick) periods of time.

For highly specific to a farm human capital (managerial, technological knowledge, personal contacts etc.) that mode is essential for protecting critical labor supply transactions. For example, acquired (through training, "learning by doing") knowledge for the management of a particular farm is very often highly specific for that farm asset[39]. That is why its supply is usual "integrated" through a contract for permanent employment.

In one-person farms (self-employment) the permanent employment is a result of the combination of functions of farm management and effective ("own") execution of intrafarm production and related activities. In Bulgarian conditions it is often a consequence of the low opportunity for alternative employment of labor (high redundancy, low qualification, old age) and other owned resources (e.g. farmland, livestock). In that case the only possibility for "business" is an internal organization of available resources (labor, land etc.).

When it is impossible to utilize own labor throughout the year (during all seasons) it either stays unused (seasonal or part-time occupation, redundancy) or it is applied in other farms and industries (selling out labor). For instance, more than a fifth of surveyed farms have no permanent mode for labor supply.

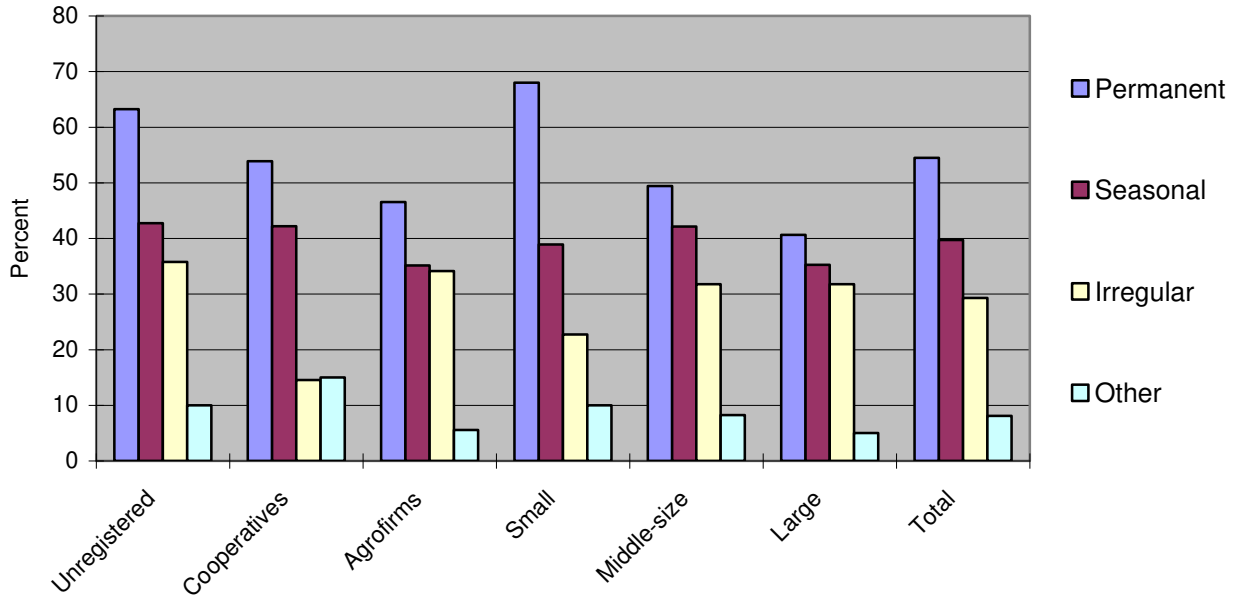
Finally, the ownership on a great part of the material (non-human) assets of a particular farm is frequently used to "secure" own employment in these (family, cooperative) farms without any economic (production, transaction) reason for internal organization of transactions.

The permanent labor accounts for more than a half in the average annual structure of workforce in surveyed farms (Figure 19). This form of employment presents a major share in the average annual workforce in applying small, unregistered and cooperative farms. On the other hand, large farms and agro-firms which use permanent contacts rely to the lesser extend on that mode for supplying needed labor.

Almost tree-forth of surveyed farms apply *seasonal* supply of labor. That is caused by the "seasonal" character of (some) activities in farming and necessity for "oversupply" in particular periods of the year (summer, autumn). Needed labor for extension of farms in such periods is secured by a temporary (short-term) contract.

[39] Unlike other industries market for farm managers usually do not develop.

That mode allows flexibility in labor supply in accordance with the internal necessities of farm enlargement. It saves costs for a permanent contract (for finding permanent work for hired labor, for supervising etc.) and for daily renewal of contracts (for labor or service supply) during the active season. At the same time, seasonal form protects transactions for specialized labor supply from failures in pick periods, certain campaigns etc.



Source: interviews with farm managers

Figure 19. Share of different type of employment in annual structure of workforce of farms

Bigger farms, cooperatives and firms use to a greater extend that mode for labor organization, while a considerable part of unregistered and smaller farms obtain labor supply through other forms. On average the seasonal employment accounts for a good share in the workforce of farm applying that form of labor supply.

Around 41% of surveyed farms use also *irregular employment,* as a half of agro-firms and a tree-forth of large farms apply that form for governing of labor supply.

That organization of workforce is related to the necessity for “internal” organization of labor in particular days or short periods (e.g. seedling, harvesting etc.). In certain cases those are critical operations for the farm. Therefore, an internal employment under the management control rather than outside service supply contract is preferred. Usually, those are specialized and not rarely highly-qualified activities where labor market works

well. Finding out and securing needed labor is not expensive while major material assets for carrying out critical transactions are generally integrated within the farm (harvesters, dryers, irrigation facilities etc.).

In some cases there is a need for additional low-qualified labor for various insignificant and for non-standardized operations. Since it is uneconomical to negotiate details for each individual service ("activity by activity") moreover with different agents, irregular employment is used (daily, weekly, for a certain period) and labor is directed according to the specific needs.

Finally, in agriculture there are technological operations which require in certain moment of time a big number of low-qualified labor for standardized activities (e.g. manual harvesting, manual cultivation etc.). Such labor is supplied through contracts for irregular employment which character is little different from standard service supply contracts ("output base" compensation).

More than one-third of annual workforce in unregistered farms and firms which employ irregular labor is secured through that form of supply. Cooperatives supply insignificant share of workforce through that mode. In many instances, farms preferences to temporary contracts (seasonal, irregular) are associated with opportunities to economize on compulsory social and other (e.g. redundancy) payments which would be hardly escaped with permanent labor contacts (due to inspections, auditing, labor-unions pressures etc.).

More than 11% of surveyed farms apply *"other" employment* along with the extension of variety of effective modes for supplying labor (mixed, "double" employment, interlinked contracts etc.). Mostly agro-firms innovates the modes for labor supply and use forms which are typical for business organizations. In overall workforce structure of farms applying that form, the share of labor supplied through that mode is still insignificant and varies according to the types of farms.

A dominant part of surveyed farms use labor in *production* (94%). That is "natural" since farms are main production structures in agriculture. In the overall structure of workforce above 74% is employed in production, and that share is higher in unregistered farms and lower in cooperatives and firms. Besides, small-size farms employ lesser share of their workforce in production in comparison with larger farms[40].

The portion of farms employing labor for coordination and controlling of various (internal and external) transactions of the farm is significant: accordingly 71% in *administration* and 63% in *management*. As much as 18% of the total workforce of farms is

[40] Intrafarm specialization (and thus productivity) is less developed in small farms.

engaged in these specialized activities. The share of cooperatives and agro-firms, and middle-size and large farms using their labor in that way is particularly high.

Furthermore, various types of farms have quite different part of their workforce in administration and management activities. While in firms and large farms the portion of workforce in management is slightly above 4%, for other type of farms it is much higher. Likewise agro-firms and large farms apply relatively lesser share of its workforce in administration. All that demonstrates that governance efficiency in large farms and agro-firms (measured through direct relative costs for management and administration) is comparatively higher than in unregistered and cooperative farms.

One-forth of unregistered and small farms utilizes labor for *security*. The segment of cooperatives and firms using specialized workers for protection from internal and outside stealing, and expropriation of property is especially great - 71% and 94% accordingly. The relative share of labor for security in the total workforce of farms is 9%. Unregistered farms apply considerably lower part of their workforce for that activity than cooperatives and firms.

"Extension of business" is the reason for hiring a labor for each forth of surveyed farms. Share of agro-firms and bigger farms, which use that form for labor supply for enlargement of farm, is significantly bigger – 35% and 45% accordingly.

For one-third of agro-firms the rationale for hiring additional labor is *"for assisting own labor".* For large portion of unregistered farms (35%) the reason for applying that mode is *"for assisting family labor".* Around 17% of farms hire labor in order to *"substitute family labor".* Firms and middle-size farms are major employers of labor for extension of farm business, while unregistered and small farms hire labor mainly for assisting and substituting family labor.

More than 43% of farms utilizing outside labor use *hired labor in production*, and around 23% hire labor for *administration*. Every tenth farm employs hired labor in farm management as share of cooperatives applying that form of hired labor is higher than in other farms (indicating bigger "needs" and less efficiency).

One-fifth of farms hire labor for *security*, and that portion is minor only for unregistered and small farms (6% and 11% accordingly). The latter is a result of *lesser needs* for security in small farms (small amount of property, insignificant output, single location of property and output, safer location of farms within or nearby residential areas) as well as *smaller means* (practical possibility) to invest in that activity.

Diverse type of contracts is used for governing relations with different kind of hired labor.

Written contract is the major form for hiring permanent labor in 62% of unregistered farms, in almost all cooperative and middle-size farms, and in all firms and large-scale farms. However, *unwritten agreement* for employing permanent labor is also practiced in a considerable part of unregistered and smaller farms (38% and 33% accordingly).

The written form gives a greater transparency and security of employment relations as well as an opportunity to use a third party (e.g. court, local public and private authority etc.) for resolution of possible conflicts between parties.

However, formal (written) permanent contract is associated with additional costs for: preparation, juridical consultations, in some cases - notary registration, compulsory payments (for working off-limits, for allowed leave of absence, for social security etc.), and termination (redundancy compensations). That is why it is not preferred mode by a part of farms. Moreover, in compact rural community everybody knows everybody and permanent relations are often governed by good will, trust, reputation, and community pressure.

"Detailed specification" of obligations of both parties in permanent contracts with hired labor is practiced in main portion of firms and middle-size farms.

Majority of the rest kind of farms negotiate each side responsibilities only *"in general".* Most operations in agriculture are less standardized and hardly predicted. Often it is either extremely expensive or practically impossible to specify (plan) obligations of each side in all possible situations, and to put them in a written form. That is why in a good part of farms' permanent labor contracts only a general negotiation of obligations dominates.

For hiring seasonal workers written contracting is applied by a majority of firms and large farms as well as by a big part of cooperatives and middle-size farms. At the same time a major portion of unregistered and smaller farms favor oral agreements.

For hiring irregular workers all small and unregistered farms, and a majority of other type of farms practice unwritten agreements. Merely a greater share of cooperatives use written form as a half of them give preferences for that mode for governing relations with irregular hired labor.

Most farms negotiate obligations with hired seasonal and irregular labor only in general. Besides, 17% of farms do not make *any negotiation of obligations* in contracts with hired irregular labor. The period of duration of temporary contract in farming is relatively short, and the character of obligations of both sides is usually "not specific" (and well understood by either party). Therefore, in such contracts parties frequently economize costs for detailed negotiation and written specification of obligations.

Personality of the labor is of a particular importance in employment contracts.

For instance, one-fifth of surveyed unregistered farms and firms most often hire *relatives* for permanent work. Number of *close friends* employed in these farms is also significant. Each forth of all farms prefers to sign a long-term labor contract with person who is *known prior to hiring.* Previous information about the quality of partner and the trust minimize considerably the costs for finding labor, negotiation the terms of employment contract, controlling and overcoming conflicts of contract execution. More than 16% of farms hire permanent labor *from universities, agricultural schools etc*. and here the expectations for high qualification are important for selecting the employed labor.

For hiring seasonal labor most of farms have a preference to “person who is known prior to hiring” and “renovation of contracts with the same person every time”. Relatives are also among employed seasonal labor in one-forth of unregistered farms. A good portion of cooperatives hire seasonal workers among close friends. All these proves that personal, rather than market relations are essential for selecting that sort of labor. Only larger share of agro-firms report they chose “unknown before initial hiring” for seasonal work.

Similarly, employed irregular labor is usually known before hiring and the same person every time for most farms. Therefore, for all forms of outside labor supply the previous knowledge about skills and reliability of workers are essential for initiation or renovation of employment contracts. In the close rural communities “everybody knows everybody” and built (good or bad) reputation is a principal factor for minimizing labor supply costs.

“Unknown persons before hiring” are also used in temporary labor contracts (seasonal, irregular). However, they are usually employed for routine, standardized and low-risk activities. Besides, temporary character of contract diminishes the risk of making mistakes in selection of proper labor (with inappropriate qualification, unwillingness for intense work, criminal behavior etc.). Undesired qualities are easily realized in course of labor utilization, and hired labor is either dismissed or contract is not renewed in next season or campaign. That contract mode gives the employer an opportunity for a rapid and low-cost enforcement (ceasing or not renewing labor contract without any payments of compensation etc.), and restricts significantly the opportunistic behavior of hired labor.

The analysis of dominant forms of labor compensation for hired workers in different farms shows that they depend on the character of activity. When individual contribution of employed labor is difficult to measure then *time-based (monthly or daily) compensation* is used (e.g. for employees in management, administration, security). In these cases,

additional mechanisms for controlling reliability of work are also applied such as direct monitoring and control, employment of division managers etc.

For permanent workers various forms for connecting labor compensation with final (annual, overall) productivity is commonly applied. The later *mixed mode* increases incentives for amelioration of the overall efficiency of organization (through mutual control and self-control) turning hired labor in a co-owner of the final output (and a bearer entrepreneurial risk).

When labor productivity is relatively easy to measure (standardized and routine activities) and there is a strong link with individual efforts then an *output based compensation* of labor is typically applied (e.g. livestock and services). Employment of labor under such payment mode contains strong incentives for increasing efficiency and self-restricting opportunism. In fact it is very close to a service supply contract.

Majority of surveyed farms report they do not have or *rarely have problems* with permanently hired labor which lead to termination of employment contracts. That kind of problems encounter about 23% of unregistered and small farms, one-tenth of cooperatives, and only 9% of firms.

None of the large-scale farms have *serious problems* with hired permanent labor which lead to *failure of contract* relations. Needs for a permanent employment contract are a consequence of the high frequency of transactions between both parties, and/or the existence of developed specificity (profitability) of human capital to assets of a particular farm (higher remuneration, higher productivity from exploitation etc.). Here continuation of contract relationships is in interests of both parties, and there are strong bilateral interests for a rapid and “peaceful” resolution of emerging disagreements.

The “lack of entrepreneurial spirit” is indicated as a main *reason for conflicts* with hired permanent labor in more than 30% of farms. Furthermore, “tendency for cheating, stealing etc.” is a main factor for conflicts in majority of cooperatives and agro-firms. The “lack of qualification” of employed permanent labor is a ground for disputes in 27% of firms while the “unwillingness for intensive work” is an important reason only for a greater part of unregistered farms (32%).

Provisional feature of contracts with seasonal and irregularly hired labor is a consequence of the inferior or “temporary” mutual dependency of parties. Therefore, possibilities for opportunistic behavior are much greater for this type of contract. That is why the share of farms having *often or always* problems reaches 36% for seasonally hired labor, and a half for irregularly employed labor. For majority of the farms main reasons for

conflicts with various kinds of temporary haired workers are “unwillingness for intensive work” and “tendency for cheating, stealing etc.”

According to the managers of surveyed farms in *production related activity* they spend considerable *efforts and time* devoted for “organizational activity”, “current planning of activity”, and “direct involvement in production activities”. At the same time, “controlling purchased services”, *“directing and supervision of applied labor”,* “introduction of new technologies”, and “strategic planning” are relatively less costly. Nevertheless *“efforts and time for directing and supervising applied labor”* are reported “high” or “moderate” by two-third of the managers of surveyed farms.

Furthermore, in *non-production activities* the efforts and time for *“finding new workers”* is great only for 15-22% of farms. Thus the high governing costs associated with labor contracts (for finding a partner, negotiation contract terms, planning activity and innovations, direction and monitoring of labor, contract disputing and enforcement etc.) are among crucial factors restricting farm enlargement of farms at present stage of development.

Chapter 11

5. MANAGEMENT OF FARM SERVICE SUPPLY

Surveyed farms govern is a diverse ways the supply of different kind of services (Table 9). Share of farms using an *own supply* ("without outside provider") of major agrarian services is significant. Mostly, larger operators benefit from the *integration* of services through exploration of the internal potential for economies of scale and scope on specialized and/or specific investments.

What is more, very often an outside (market) supply of farm services is "too expensive" because of undeveloped markets of specialized services (high market prices, monopoly supply, missing markets), or a great risk from external supply (unilateral dependency) of "critical" to a farm activities.

Due to the high market uncertainty (insecurity, possibility for opportunism of supplier), and the critical character of supply in particular time and quality, a particular service is self-supplied (internal organization) in order to avoid risk of production failure (not carried agro-technical activities, low yields and product quality, unharvested yields etc.).

According to surveyed farms the main reasons for "not using" outside supply of different sort of services are: "possessing necessary qualification" or "having needed worker to carry out that activity". That proves that a good part of farms integrate supply of critical for farm development (farm-specific) transactions through training, learning by doing experience, or hiring a specialized labor.

Inner integration of "services" is efficient only when they are strongly *specific to a farm* (e.g. market fails to supply highly specialized technological knowledge to farm), and when it is necessary to *protect unilaterally dependant* transactions (such as irrigation, plant protection, veterinary care etc.).

However, when technological economy of scale and scope from investments in specialized assets can not be explored *within* farm boundaries (for meeting own demand or outside sells of services), then a *special (private, coalition) organization* is usually used - cooperative, farm organization, group supply etc. The latter is more frequently applied for veterinary and mechanization services, and spreading chemicals and pesticides.

Table 9. Governing of service supply in different farms (percent of farms)

Type of services	Modes	Unregistered	Coopera-tives	Agro-firms	Small	Middle size	Large
Technological knowledge and advises	Own supply	24.32	39.29	25.00	24.32	18.18	68.75
	Own cooperative	0.00	3.57	15.63	2.70	11.36	0.00
	Jointly with other farms	10.81	10.71	0.00	10.81	6.82	0.00
	Market supplier	13.51	10.71	25.00	13.51	25.00	0.00
Mechanization services	Own supply	18.92	42.86	40.63	13.51	40.91	56.25
	Own cooperative	2.70	14.29	6.25	5.41	11.36	0.00
	Your farm organization	10.81	0.00	12.50	10.81	0.00	25.00
	Jointly with other farms	18.92	14.29	25.00	18.92	15.91	31.25
	Market supplier	10.81	7.14	28.13	8.11	15.91	31.25
Maintenance of machinery and equipment	Own supply	32.43	42.86	34.38	29.73	36.36	50.00
	Own cooperative	0.00	32.14	15.63	10.81	18.18	12.50
	Jointly with other farms	5.41	10.71	12.50	5.41	6.82	25.00
	Market supplier	8.11	7.14	12.50	8.11	13.64	0.00
Spreading chemicals and pesticides	Own supply	40.63	39.29	28.13	28.13	38.64	43.75
	Own cooperative	0.00	7.14	0.00	3.13	2.27	0.00
	Your farm organization	0.00	0.00	12.50	0.00	6.82	6.25
	Jointly with other farms	15.63	14.29	9.38	18.75	13.64	0.00
	Market supplier	12.50	32.14	28.13	21.88	20.45	37.50
Veterinary services	Own supply	31.82	57.14	15.00	24.00	28.00	83.33
	Own cooperative	0.00	21.43	15.00	0.00	24.00	0.00
	Jointly with other farms	13.64	7.14	0.00	16.00	0.00	0.00
	Market supplier	36.36	50.00	60.00	40.00	52.00	66.67

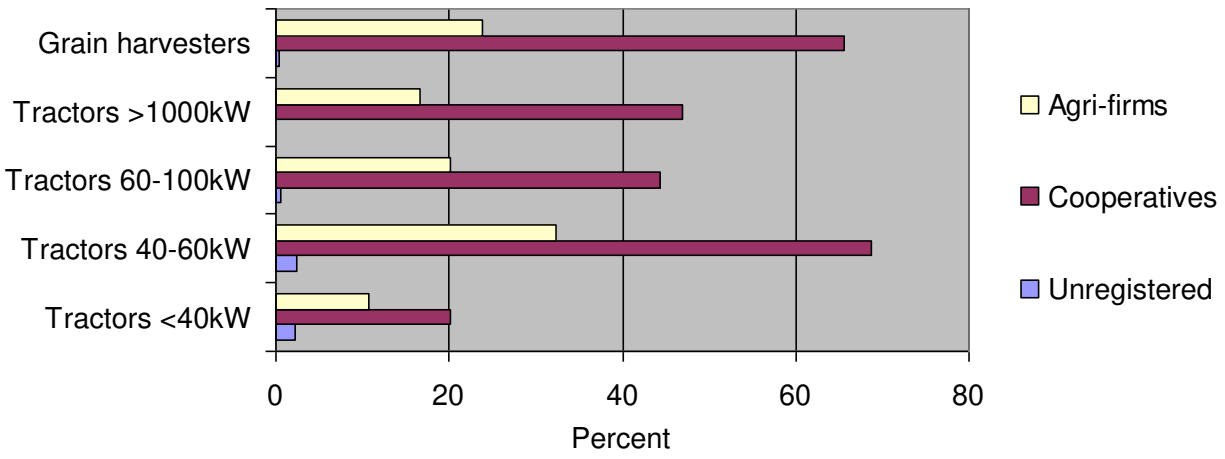
Source: interviews with farm managers

Nevertheless, many needy small-scale farms can not develop or participate in such collective organization (unaffordable development or maintenance costs) and these transactions either fail to occur or they are not carried out in an effective scale. All that has significant negative implications for many smaller-scale farms in terms of competitiveness

and compliance with modern labor, quality, technological, environmental, and animal welfare standards.

Principally, overuse of manual labor and low labor (safety, intensity etc.) standards, employment of animal power and primitive technologies, insufficient compensation of intakes of N, K and P from soils, shortage of disease and pest protection, bad animals healthcare, low yields etc., all they are common in Bulgarian farms [Bachev 2010].

The last agricultural census also have proved that in a national wide scale the majority of key machineries (tractors and harvesters) are used by the largest farms – cooperatives and agri-firms (Figure 20). What is more, while most farms do (can) not employ owned key machineries they relay on tractors and harvesters "hired or used in association" to safeguard the effective supply of a critical to farm mechanization services (Figure 21).



Source: MAF, Agricultural Holdings Census, 2003

Figure 20. Share of different type of farms with UAA using tractors and harvesters

Our study demonstrates that a significant part of surveyed farms still *use no major services* at all. For instance, more than 40% of unregistered farms, two-third of agro-firms, and one-quarter of cooperatives report they do not apply services for supply of "technological knowledge and advice". More than a third of unregistered farms, one-fifth of agro-firms, and some portion of coops do not use "mechanization services". A half of unregistered farms and majority of small farms do not employ services for "maintenance of machinery and equipment". Almost a third of unregistered and small crop farms do not use service for "spreading chemicals and pesticides". "Veterinary services" are not employed by one-third of unregistered livestock farms and more than one-fifth of livestock firms.

Source: MAF, Agricultural Holdings Census, 2003

Figure 21. Share of farms with UAA using "owned" or "hired and in association" machinery

The "lack of any necessity" from services is a reason for "not using" for some portion of surveyed farms. However, major factors for not applying a service supply contract are the "lack of outside supplier", "high price for outside procurement", "problems with contracting outside service supply", and "quality problems of outside supply".

Markets for some services are still not well-developed in the (entire) country and there is a week contract position (contractual asymmetry, monopoly situation) of some type of (smaller-size, unregistered) farms. Subsequently, a significant fraction of farms block otherwise effective (in terms of needs, productivity) service supply transactions because of the lack of needed outside supply or the unacceptable prices.

However, "the high price" for outside procurement is often a consequence of the "small farm size"[41], which makes impossible the effective internal exploration of acquired services (e.g. know-how, new technologies, mechanization etc.). As a result of not carrying out of these important for farms activities there are serious problems for meeting modern technological, market, food safety, environmental and animal welfare standards.

Furthermore, a part of important services such as technologic-know how, disease control etc. are with *non-material* character *(little appropriability),* which impedes transactions though market or contract form (impossibility for mutually beneficial exchange and protection of rights). That is why the *internal organization* (own or co-production,

[41] Insufficiently developed farm size usually is a result of blocking of *other* critical for the farm development transactions such as the high costs for credit supply, for marketing of output etc. [Bachev 2006].

coalition) or *public intervention* (involvement of a third party through assistance, provision or mix mode) are the only feasible forms for governance.

Most frequently *market* and *private* sector organize non-material service supply along with (complementary to, in package with) supply of the major material inputs (machinery, chemicals etc.) in a form of “free” advices, consultations, maintenance etc.

The amount of *market* supply of agrarian services is not significant and varies according to the type of farms and the kind of services.

The outside contract for service supply (purchase of a service) is an *alternative* form for the internal organization of labor (“own production of services”). That mode of farm extension is usually used for *standardized* and less specific to farm operations (plugging, spreading of chemicals, guarding etc.). Here contracting and controlling (output assessment) of the service supply do not require high costs, and the maximum scale and scope economies are realized through specialized *service market*.

Alternatively, the hiring and the internal utilization of labor would involve additional costs: for organization and monitoring of workforce, for “training” of labor, for social payments (insurance, redundancy etc.), for compensation in non-working days (holidays, rainy days, out of season periods etc.). Besides, inter-farm organization would be associated with necessity to supply (through purchase or lease) of specialized machinery and other material assets for carrying out such services increasing additional procurement and transaction costs.

Our survey has proved that major reasons for *outside* (market, contract) or *collective* (in a coalition) supply of certain services is the “best price”, “high quality”, “additional services”, “lack of problems in contracting and implementation”, “high confidence in supplier”, or “lack of another supplier in the region”. All these indicate that farms receive a certain benefit from extra-farm management of transactions - price, quality, supplementary services interlinked to main supply etc.

This organization is preferred when there is built a *good reputation* of a supplier (high quality, big confidence) and costs for negotiation and enforcement of contracts are not considerable (more universal character of services and possibility for low costs control; simultaneous management of supplies of two or more interlinked services etc.). In many instances, services provided by specialized market agents or member organizations (cooperative, co-ownership) have such character.

Nevertheless, there are many cases of *mini-monopoly* or *undeveloped markets* forcing farms to get needed services from a single supplier in the region. That is true not just for general services like public administration, garbage collection, energy and water

supply, but for specialized farm services like veterinary, mechanization, extension and advice etc.

Unilateral dependency (abuse of power) is particularly typical for diverse *public (community, state) services* which often are "too expensive" for farms[42] in terms of complicated procedures, time, efficiency, formal and informal (bribe) payments etc.

Most farms report that the frequency of using the same supplier is high ("always" or "predominately" the same provider) which minimize the costs of their relations (building reputation, confidence, system for coordination and stimulation, self-restriction of opportunism, standardization of transactions) and intensifies bilateral transactions. Nevertheless, more than 19% of surveyed farms have more than "one supplier" or "a new supplier every time" for outside services. That is a result of necessity to use diverse ("other") services from various (specialized) provides or numerous smaller-scale suppliers.

According to most of the managers of surveyed farms finding suppliers, negotiation, enforcement and dispute resolutions of contractual deals take a considerable time and efforts (Table 5). Thus transaction costs associated with the service supply are a major factor limiting the effective enlargement of farms.

[42] Even when these services are formally "free of charge".

Chapter 12

5. MANAGEMENT OF FARM INPUTS SUPPLY

Surveyed farms govern in different ways the supply of major inputs. An *internal organization* (integration though "on farm making" and own production) is common for essential inputs such as seeds and seedlings in crop farms, and forage for animals and breeding animals in livestock farms (Table 10).

The supply of building and animals is also practiced by a good number of farms as own production (reproduction, new construction, modification etc).

The internal organization of inputs supply is an *alternative* mode to external procurement (through purchase or lease) of assets, and/or outside service supply, or other (not input intensive) mode for farm extension.

For instance, instead of supplying fertilizers a farm leases-in new fertile lands every season or applies more labor force (labor intensive expansion, organic farming). Similarly, alternative for the supply of material assets is the purchase of material services (mechanization, plant protection, harvesting, transportation etc.).

Usually the restriction of a market supply of farm specific assets is a result of the high transaction costs associated with undeveloped markets for purchase and lease of inputs; high uncertainty and risk of price dynamics and/or availability of inputs in a needed periods or moments of time; difficulties in quality verification of seeds and forage; monopoly or another dependency from a supplier etc.

Besides, a part of the machinery (tractors, harvesters, milking installation), buildings and productive animals are either highly specific to a farm (strong mutual dependency with other farm assets) or especially needed in particular "critical" periods (harvesting, milking etc.).

For instance, productivity of milking cows strongly depends on knowledge and care for individual animals, long-term investments in animals (feeding, healthcare, breeding etc.), and in some instances even from the relationships of animals with a particular worker (typical for buffalo breading).

Table 10. Governing of inputs supply in farms (percent of farms)

Inputs type	Supplier	Unregi-stered	Coope-ratives	Agro-firms	Small	Middle size	Large
Chemicals	Own production	17.86	0.00	0.00	19.23	0.00	0.00
	Own cooperative	3.57	4.76	6.90	3.85	7.89	0.00
	Own farm organization	7.14	0.00	6.90	3.85	7.89	0.00
	Market supplier	71.43	95.24	86.21	73.08	84.21	100.00
Seeds and seedlings for crop farms	Own production	46.88	52.27	32.65	58.33	40.32	29.63
	Own cooperative	3.13	15.91	12.24	2.78	9.68	25.93
	Own farm organization	0.00	0.00	10.20	2.78	6.45	0.00
	Market supplier	50.00	31.82	44.90	36.11	43.55	44.44
Forage for livestock farms	Own production	54.84	65.00	50.00	58.97	54.55	46.15
	Own cooperative	0.00	0.00	14.71	0.00	3.03	30.77
	Own farm organization	0.00	0.00	20.59	2.56	15.15	7.69
	Market supplier	45.16	35.00	14.71	38.46	27.27	15.38
Machinery	Own production	12.00	23.33	19.51	12.00	19.15	25.00
	Own cooperative	20.00	10.00	26.83	12.00	19.15	29.17
	Own farm organization	0.00	6.67	19.51	0.00	19.15	4.17
	Market supplier	68.00	60.00	34.15	76.00	42.55	41.67
Livestock	Own production	36.84	50.00	27.78	40.91	39.13	25.00
	Own cooperative	0.00	12.50	22.22	0.00	26.09	0.00
	Own farm organization	21.05	18.75	11.11	18.18	21.74	0.00
	Market supplier	42.11	18.75	38.89	40.91	13.04	75.00
Buildings	Own production	73.33	64.29	41.38	82.35	51.43	45.00
	Own cooperative	0.00	17.86	24.14	5.88	22.86	15.00
	Own farm organization	0.00	10.71	27.59	0.00	20.00	20.00
	Market supplier	26.67	7.14	6.90	11.76	5.71	20.00

Source: interviews with farm managers

In addition to their specific character, these type of long-term biological assets have comparatively high frequency of use, relatively shorter period of effective life, and possibility for “full” exploration of technological economies within (small-size) farm boundaries.

In order to avoid likely risk from using an outside contract, a preference is given to using of *own* organization (inputs supply cooperative or another farm organization) or *entirely integrated* mode (own procurement, on farm making). For instance, instead of extension of its specialized activity a livestock farm integrates supply of forage (an entirely different - crop activity) in order to avoid an unilateral dependency from a supplier of forage or to use free internal recourses (which otherwise are costly or impossible to trade on market).

Also when there is potential for *join (collective) realization of economy* (scale and scope) in inputs supply or when it is economical to *protect* dependant transactions (through a better coordination and control, preventing possible opportunism of a supplier) then it is formed or participated in a private organization for inputs (service) supply such as cooperative and farm organization. The later is typical for supply of machinery, buildings and animals in surveyed farms.

In a national-wide scale the majority of key machineries (tractors and harvesters) are also either owned, hired or used in association by farms in order to safeguard the effective supply of a critical to farm assets (Figure 21).

For long-term assets there are *two* possible contractual forms for outside supply – *purchase* and *lease*.

In some cases leasing of buildings and equipments is used in agriculture as a temporary or permanent form for governing relations with suppliers of these resources. Employment of leasing is determined by the long-term *universal* character of material assets (stable, greenhouse, storehouse, dry house) and the relatively shorter cycle of agricultural activities using productively these assets. Acquiring a full ownership on such assets is not necessary since they are with low specificity to a particular farm.

The lease contract let an effective management of the supply and a full pay-back of investment in lease period. The purchase of assets would only increase the overall supply costs (for negotiation of sale, checking authenticity, preparation of documentation of transfer, notary registration etc.), freeze a considerable amount of farm finance in these assets, and require additional costs for ceasing supply in case of failure of venture or after production cycle is complete (selling out, leasing out of unnecessary assets).

Furthermore, in the transitional period of restructuring of ownership (privatization, redistribution, demonopolisation), the lease contract was often the only possible form for supply of a great part of the long-term agrarian assets [Bachev 2000]. That was a consequence of indentified, disputed, or physically indivisible character of ownership of reorganized (liquidated, privatized, transformed) ancient farm structures – cooperative under liquidation, state and municipality farms and firms etc.

Finally, unlike land lease contract the leasing conditions for very *mobile assets* such as machinery and animals (care, extend of exploitation, share rent, preservation and return to owner) are quite difficult to control from the owner (big information asymmetry, and possibility of opportunistic behavior from the lesser). That is why leasing markets for such resources hardly develop and the ownership (farm, group, cooperative) is the dominant form for governing of these assets in agriculture[43].

Surveyed farms apply *market procurement* predominately for *standardized* inputs such as chemicals, machineries, and livestock. Those are mass products, with a secure supply, and an occasional purchase. There are multiple (alternative) suppliers and market competition works well and governs effectively supply. Besides, the frequency of deals with the same suppliers is high which reduces transacting costs since there is a strong interest for continuing bilateral trade (self-restriction of opportunism). What is more, it become economical to invest in a specific capital for maintaining of a “regular” supply (getting to know the partner; development of trust and mechanisms for coordination and motivation; interlink organization of transactions etc.).

The universal (standardized not specific for a particular farm or a buyer) character of most of the agrarian material inputs also additionally restrict the opportunism of suppliers. Principally, unsatisfied farmer can always turn to another supplier without significant a change in the costs of supply.

The reported cases of diversification of suppliers are usually cased by the needs of *different type* of inputs (diverse kind of chemicals, seeds, machineries) which commonly have different suppliers.

Nevertheless, often the effective (technologically optimal, sustainable) farm extension through internal, collective and (or) outside inputs supply modes has been severely restricted as a results of the big institutional uncertainty (not working public system for enforcement of private rights and contracts) and the high transacting costs for supplying

[43] Nevertheless, in recent years leasing of farm machinery (tracks, tractors, harvesters) started to develop as a form for interlinked organization of crediting and inputs supply in the conditions of not developed market for long-term credit supply in agriculture.

critical for a farm resources (technological knowledge, management skills, credit for fund the inputs supply etc.).

For instance, the amount of used chemical fertilizers and pesticides in Bulgarian farms now represents merely 22% and 31% of the 1989 level[44]; a negative and unbalanced rate of fertilizer compensation of N, P and K intakes from soils dominate[45]; there has been 20 folds reduction in irrigated farmland after 1990; and merely 0,1% of the livestock farms possess safe manure-pile sites, around 81% of them use primitive dunghills, and 116 thousand holdings have no facilities at all [MAF].

The major *reason for choosing a supplier* most frequently pointed out by farms is "the best price". At the same time " the lack of alternative supplier" is either not a factor or it indicated rarely as a reason for selecting a supplier for a particular input. Thus *market prices* and *competition* relatively well coordinate the supply of part of main agrarian inputs.

The existence of numerous suppliers *relatively* increases the transaction costs of supply (for searching the best price, partner, terms of supply etc.). Nevertheless, the competition of suppliers leads to reduction of market prices, improving the quality, minimizing unilateral dependency, and *absolute* contraction of costs for market supply.

For a good part of surveyed farms a major factor for choosing a particular input supplier is *"delayed (portion) payments"* (with exception for animals). That mode effectively interlinks inputs supply with a credit supply to a farm.

Short and long-term investments in agriculture usually require a longer pay-back period (at least until the next harvest season). Therefore, a delayed or fraction payment for outside input supply actually represents a parallel lending of a free or low interest (short or long-term) credit by a supplier.

The *interlinked organization* ("input supply plus crediting") facilitates transactions, minimize the overall costs for management, and intensify inputs supply and relationships between counterparts. A supply of material assets "in package" with crediting ("loan in kind") is beneficial for farms since: it either saves own finance of significant capital investments; or economize costs for finding and servicing an outside loan (from a bank or another agent).

In a situation of vast shortage of own finance sources and a high costs for external credit supply, that is often the only available form for the enlargement (or the preservation)

[44] That sharp reduction in chemical use has drastically diminished the risk of chemical contamination of soils, waters, and farm produce, and a good part of farm output has got "organic" character [Bachev 2008].

[45] Accordingly, an average of 23595,4 t N, 61033,3 t P205 and 184392 t K20 have been irreversibly removed annually from soils since 1990, and there has been a considerable increase in agricultural land affected by acidification [MAF]

of farm size. Not rare such an interlinked supply of long-term assets in fact represents leasing (rent) rather than a sell of actives. That specific form for governing of transactions with inputs supply industries corresponds to development of a particular lease market for more universal and easy to supervise assets (such as large machinery, building etc.)[46].

"On farm delivery" is often a main reason for selecting a supplier for chemicals and forage. Here the preference of a supplier is determined by the provision of an "additional" (transportation) service in a "package" with input supply. That form economizes on direct transportation costs (when "supply is free of charge") for needed inputs. Besides, a significant economy is made from over passing needs to maintain own specialized (e.g. for dangerous chemicals) transport or for finding a supplier of specialized transportation service.

"The high confidence in supplier", "high quality" and "good reputation of a supplier" are also among the common reasons for choosing a supplier by majority of surveyed farms.

At the time of purchase *information asymmetry* is considerable in terms of quality, origin etc. of inputs. That is why controlling of possible opportunism in supply is either extremely difficult or very expensive (e.g. through costly laboratory tests, expertise etc.).

Often the pre-contractual opportunisms is "practically" detected afterwards (e.g. low quality or non-corresponding to specifications chemicals, seeds, forage, animals, machinery) being quite expensive for farms. Mistakes in these transactions result in failed yield, low quality or non-authentic produce, low productivity of animals, unusable or costly maintained ("second hand") machinery etc. In order to avoid risks from this kind of "failures" the farms usually do not rely on anonymous (market) counterparts for supply of such inputs.

"Receiving additional benefit(s)" is another important factor for selecting a particular supplier for some of new chemicals, machineries, animals and feed for livestock. Suppliers usually provides "free" non-material assets or services like training, know-how, technical advise, maintenance etc.

Since the appropriability of these transaction is low (a non-material character), the "package deal" with the main material input is the only effective modes for effective organization. The largest farms and firms are most open for innovation (strong competition, high efficiency of introduction of innovations, bigger entrepreneurship) and for them this

[46] At the same time, similar lease market does not emerge for productive animals since lease contract is difficult to monitor (livestock could be easily consumed or resold). Therefore, purchase is the major form for outside supply of livestock.

specific form of contract is particularly important for supply of necessary technological innovations.

For a considerable number of farms *"inputs supplier buys the farm output".* That interlinked organization of inputs supply with marketing of farm output ("reciprocial supply") minimizes the overall governance costs for two groups of transacting (a single contract for input supply and marketing).

In many cases, this mode extends *vertical coordination* (quasi or complete integration) of farms with the supplier of a particular input (e.g. super elite and original seeds). In other instances, there is a *mutual* (e.g. capacity, time of delivery, perishability) *inter-dependency* and a buyer of farm produce (e.g. a milk or meat processor, dealer) organizes supply of a critical input (e.g. forage for livestock) in order to secure the origin, high quality, quantity, and time of delivery of critical raw material.

There are also many cases *"when input supplier assists the marketing of farm output"* and that reason for choice of a partner is reported by some farms in animal, seed, chemical and forage supplies. Offering of a "free mediation" in marketing (interlinking with a new service) makes a particular supplier preferable among competitors, saving farms costs for marketing of output and overcoming market uncertainty.

In the supply of *short-term assets* most surveyed farms use predominately "based on a market price" and "negotiated price in each deal". The larger farms also apply a "fixed for a longer period of time price" for chemical and forage supply. Namely for the latter farms market uncertainty and fluctuation of prices to a great extend affect productivity (large consumers, high frequency of transactions, critical assets) and safeguarding supply through a special contract provision is essential.

In the supply *of long-term assets* the most broadly employed form is negotiated price in each deal.

The most common *problems* in inputs supply reported by surveyed farms are for: "finding needed inputs", "finding a supplier", "verification of quality", "negotiation of prices", "negotiating other terms of supply" as well as in the "process of implementation of contracts" and "resolution of emerging conflicts".

Furthermore, for a good number of farms "finding suppliers for needed materials, equipment etc." and "preparing, enforcing and disputing contracts" take a significant part of managers efforts and time (Table 8). All these is an indicator for the strong *asymmetry in contractual position* (contractual power) between farms and suppliers of certain inputs.

Chapter 13

6. MANAGEMENT OF FARM FINANCE SUPPLY

A major form for funding the activities of surveyed farms is *"own sources"* (Table 11).

In transitional conditions of high institutional, market, and behavioral uncertainty most of the typical agrarian investments happen to be in a regime of high specificity ("berried in land" or "very mobile"). Besides, much of the human and intangible capital is highly specific to a particular farm (e.g. investment in training, learning by doing experience, organizational development, building of reputation etc.).

Table 11. Governing of finance supply in farms (percent of farms)

Supplier	Type of funding	Unregi-stered	Coopera-tives	Agro-firms	Small	Middle size	Large
Own financing	Short-term	91.4	81.5	79.3	91.2	81	75
	Long-term	48.6	48.1	55.2	55.9	40.5	62.5
Relatives and friends	Short-term	31.4	7.41	10.3	23.5	14.3	12.5
	Long-term	20	7.4	3.4	5.9	19	0
Outside investor	Short-term	0	11.1	6.8	0	11.9	0
	Long-term	0	0	20.6	0	4.8	25
Farm organization	Short-term	22.9	25.9	17.2	29.4	19	12.5
	Long-term	14.3	3.7	13.8	11.8	14.3	0
Commercial bank	Short-term	5.71	18.5	37.9	2.9	31	25
	Long-term	2.9	14.8	17.2	5.9	19	0
Public program	Short-term	31.47	59.3	69	32.4	57.16	75
	Long-term	37.1	33.3	17.2	44.1	26.2	6.2

Source: interviews with farm managers

Therefore, finding out an independent (market) investor to finance such assets has been quite expensive (costs to find a supplier, efforts to negotiate loan terms, losses

associated with meeting collateral requirements, extremely high interest rate or other “side payments”) or even impossible. Consequently, the internal rather than outside mode has been the most effective (or only possible) way to finance transactions (activity) supported by such assets.

Our survey has found that most farms which integrate inputs supply (in-house production) with high land or farm dependency use internal procurement for finance as well – accordingly 58% of farms with internal livestock feed supply, 55% - for seeds self-suppliers, and 43% - for own buildings suppliers.

At the same time, share of farms which simultaneously supply inputs and finance internally is insignificant for more universal and mobile assets – accordingly 28% of animals, 6% for machinery, and only 4% for chemical self-suppliers.

That proves that assets with low farm specificity tend to be financed by off-farm sources (e.g. loan contract). When specificity of transaction increases farms integrate not only the finance but also the input supply in order to protect dependant investments.

Another reason for domination of internal mode for finance supply has been the high transacting costs for off-farm investments. In insecure transitional environment, investment in own farm has been more or the most effective way to use available financial resources along with the internal utilization of other often non-tradable household recourses (land, family labor, knowledge).

Survival of a large number of the (member oriented) production coops has been also based on advance payments for services trough system of orders (“commissioning contracts”) with individual members. These cooperatives have integrated assets associated with highly specific activities to members - services to individual farms and households (e.g. food for households, feed for households’’ and private farms’ animals), employment opportunities for members etc. Those are mainly assets with high indivisibility or with a great potential for economy of scale (and scope) unachievable within individual farm boundaries.

Therefore, a collective (joint ownership) mode has been broadly used to finance and govern such community-specific assets in order to overcome the “missing market” situation, to avoid any unilateral outside dependency (monopoly), and to secure productive use of existing large-scale facilities.

For commercial farms the internal investment has been the most efficient way to use available financial resources as well. In highly risky financial markets (unstable nominal

interest rate, skyrocketing inflation[47], boom of banks failures) the direct internal control has been the cheapest (often the only possible) form to safeguard investments from outside opportunistic expropriation. Besides, investment in internal farm-specific assets (such as entrepreneurship, know-how etc.) has been much more productive since it brings higher than market (rates of interest, dividends on shares, yields on Government bonds etc.) return on invested specialized capital.

That is why the large farms and firms (which tend to perform much more effectively) invest to a greater extend their capital in own long-term assets for increasing productivity. Moreover, even farms which could find easier ("often") necessary funds from "outside sources" make the internal investment in own short and long-term assets - 30% and 13% of surveyed farms accordingly.

Nevertheless, internal sources for financing are limited by family savings, coop members specific demand (and funding potential), internal profit generation etc. That puts severe restriction on effective farm enlargement through internal finance supply. When it is necessary only 15% and 41% of surveyed farms are able "always or often" to find outside supplier for their long-term and short-term financial needs.

Only larger farms has a greater access to external financing for their short-term assets as 81% of them "often" find needed means. Almost a half of surveyed farms do not use the internal mode to finance long-term assets at all.

Besides, some farms have been using other transactions to find additional sources for internal funding. For instance, all farms show as a major reason for farmland sells-out and lease-out deals the "financing other farm activities".

Therefore, most farms need outside (mix) sources to sustain and enlarge their activities. However, high transacting costs restrict or even block the outside finance procurement. Consequently chronicle underinvestment, low productivity, limit of farm enlargement, backward technological development, unsustainable exploitation of natural resources, all they have been wide-spreading among Bulgarian farms [Bachev 2010].

Using *"relatives and friends",* as external suppliers of capital, has been very popular in rural communities. It was especially common during transition period when uncertainty was so high that personal ties and trust ("bilateral reputation mechanism") governed most economic transactions at national and even transnational scales. This mode for outside supply is still dominant for a good part of small and unregistered farms, being a singe mode for outside funding for the latter farms.

[47] Inflation was extremely high during transition period Consumer Price Index reaching 1231% in 1999 comparing to 1990 level [NSI].

Costs for negotiating and for contract enforcement are low since contracts are governed by "good-will" and personal trust between partners (usually as a part of broader friendships or family relationships). Often there is no a formal contract writing and registration, or any collateral requirements. Disputes associated with contract execution are less likely and they are easily overcome with no substantial efforts or needs for a third party (e.g. court, authority) involvement. Besides, a "preferential" (not rare zero) interest rate is habitually applied and there is a greater flexibility for loan terms.

In certain cases outside "support" of activities of smaller farms is a part of the interlinked "direct marketing" deals. Since market food prices are quite high for the pocket of mass consumers (retail profit, VAT), and there is high uncertainty associated with quality of "free marketed" products (e.g. high level of residual chemicals; uncertain origin etc.), many urbane households use personal and family ties to secure a stable supply of cheap, quality and safe[48] farm products though system of *advance (or current) orders and financing.*

Regardless of its relative efficiency the "relative-friendship" form can not be a permanent mode for finance supply. There are "natural limits" of available (free, preferential) outside sources of that kind. While majority of farms using short-term crediting through this mode report they "always or often" find external sources when it is needed, no respondent confirms such state for long-term credit needs. Besides, when "farm efficiency" is not a criteria for investment decision-making neither form can be sustainable in a long-run. Therefore, personal relations will be used as supplementary and eventually as a "last resort" mode of financing.

Share of surveyed farms which get a financial supply from an *outside investor* is still low. Most of the suppliers of funding are Bulgarian investors. They tend to finance working capital of registered middle-size organizations (cooperatives and companies). Besides, the proportion of large agro-firms which get direct outside funding of long-term investment is quite big. Foreign investors finance entirely the investments in middle-size firms of different type.

Evolution of this specific private mode for financing of farming activities is determined by the strong relation specificity of farm investments to an outside buyer of agrarian output. That is either bilateral (e.g. capacity, time of delivery, origin etc.) or most often unilateral dependency of farm assets from a particular processor, retailer, or exporter. The latter assets are usually associated with some specification of products ("special" quality or

[48] Food safety is becoming an important issue particularly for new rich and middle class Bulgarians.

production technology, “special” origin) which is of big importance for a buyer (vine producer, meat and dairy processor, produces of caned vegetable and fruit etc.).

For the reason of high specificity of such investments to a particular (single) buyer they hardly could be financed by an independent outside supplier. Here risk from opportunistic behavior in post-contract (post-investment) stage in enormous. Farms would not make dependent investments unless they are safeguarded by some effective governing form such as long-term contract, taking economic “hostages”, or join investment. Therefore, either underinvestment in specialized capital (hold-up), or direct external (coo) investment by interested vertical partner.

Our survey shows that all farms getting such funding of their long-term investments also provide an internal finance supply. Since farms are in a big shortage of working capital the outside investors (processor, trader) traditionally provide advance payments (financing current inputs supply) for interlinked future marketing deals.

This mode for financial supply usually is a part of a *larger contract(s)* for governing of vertical links - reciprocial marketing, inputs and know-how supply, joint ventures etc. Participated farms get some interest, collateral etc. preferences as a part of the entire deal.

On the other hand, the legal form of business organization (namely “agro-firm”) becomes important since it allows to build a formal partnership (e.g. direct participation in Management Board), brand name capital, daughter organizations etc., and to dispute them before a third party (e.g. court, Government authority, international arbitrage). Not rare such farms have been initiated (or taken over) from outside (off-farm) interests and develop as part of the diversification strategy of special business (bank, industrial, shadow etc) groups.

Nevertheless, unilateral dependency of farms from downstream industries dominates. Only less than 9% of farms supported by the outside investors point out they are “often” able to find needed short-term financial resource from the outside sources and no farm gets an easy long-term external funding.

Emergence of direct financing by *foreign* investors has been greatly associated with formal restrictions for foreigners to buy agricultural land until recently. That is why such a joint venture with a local agent is merely feasible way to govern foreign direct investment in farming sector. In recent years, cases of foreign direct investment in agriculture tend to be a result of increasing opportunities to profit from imported technological know how, modern organization, available marketing channels for special or mass products etc.

Farms using that mode of funding get extremely favorable interest, terms, collateral, and overall paper work treatment (similar to “own” finance supply). At the same timer, that

is not low-cost mode for outside financing – no farm credited by foreign investor testifies it is easy to obtain external financing when it is required.

Agrarian agents also invent more complicated forms to mitigate problems and facilitate financial transactions. *Interlinked organization* has been widely used to govern exchange between farms and input suppliers.

We have already demonstrated that for a good part of farms a major factor for choosing a particular supplier of inputs is "delayed (portion) payments" which effectively interlinks input with credit supply. Such organization facilitates transactions, minimize overall costs for management, intensify inputs supply and relationships between counterparts.

Supplying physical assets "in package" with crediting ("loan in kind") is beneficial for farms since: it either saves own finance of significant capital investments; or economize costs for finding and servicing outside credit. In situation of a considerable shortage of own finance sources and high costs for external credit supply, that is often the only available form for enlargement (or preserving) farms size.

One out of five surveyed farms use *"cooperative or farm organization"* as an outside finance supplier. *Collective supply* form is more important for short-term financial needs of smaller farms and for long-term funding of not-large and non-cooperative farms.

Main reasons for selecting that mode of financing are related to the comparative efficiency and the low costs: "small paper work and bureaucratic procedures", "best interest rate and terms", and "lack of need to pay for successful project for financing".

However, for a good number of farms that is the "only source for outside financing" of long and short-term activities. More than 79% of farms getting short-term funding trough the latter mode, and a half of long-term credit users, report they "always or often" are able to find external crediting they need. Therefore, when market fails or when market procurement is quite expensive, farms need, develop, and use own special private organizations for finance supply.

Evolution of joint (collective) ownership mode for farm finance supply has been very difficult in Bulgaria [Bachev and Kagatsume]. There were no traditions in farm association in the country. Transaction costs for initiation and maintenance of large-members organizations are quite high. Also incentives for equity investment are low since individual influence on policy and receiving benefit (individual use of organization, profit distribution etc.) is independent from the invested capital (a shortcoming from the cooperative mode). Finally, the farms which need collective support the most (potential membership) are extremely poor to contribute significantly to that financial joint venture.

A number of farm credit organizations have been initiated by private interest groups or by a third party (Government, international assistance program, NGO). Because of the mismanagement and corruption some of them failed – e.g. Bank of Agrarian Cooperatives, Bank for Agrarian Credit etc.

Recently established Federation of Rural Mutual Credit Associations has got some success partly due to the significant public support in creation, initial granting of "equity" capital, and in exterior supervision. However it has been experiencing difficulties extending its activities since the exterior support was suspended.

Some non-specialized in crediting farm organizations (inputs supply, marketing or producers cooperatives; professional association) also have credit programs. However, the latter activity is very limited and specialized - e.g. prioritized lending for breading animal, promotion of new products, introduction of know-how etc. Most of these organizations are "too small" to provide effective farm financing - to accumulate recourses, to realize economy of scale (and scope) on specialized lending activities etc. In some cases, they also heavily rely on a third party (Government, international assistance, NGO) support to carry out activity.

Therefore, despite the obvious advantages of collective finance supply organizations in resource accumulation, risk sharing, non for profit operations, crediting preferences, "democratic" management etc., they cannot and have not develop as a *pure* private mode in transitional conditions.

Market (credit, debt) finance *procurement* has been practically blocked for the much of the transition. It is effectively developing after 2000 but it is still not accessible for the majority of farms.

"Flexibility" of financial recourses is considerable and it is very difficult (and costly) for creditor to monitor debtors and to control if loans are used effectively and purposely. That is especially true for agriculture where investments are hidden ("berried") in land and therefore not observable at low cost.

Moreover, other major agrarian assets are very "mobile" and liquid - e.g. animals and yields could be easily consumed or untraceably sold, machinery is "on wheel" etc. Hence, using major agrarian assets for safeguard as collateral is not always feasible. Agricultural land has been rarely accepted as guarantee against losses by the commercial bank for the reason of lacking real titles (until recently) and a low demand for purchase of farmland. On the other hand, farmers are not enthusiastic to offer their vital non-agrarian assets (e.g. houses) as collateral since farm investments are associated with a high risk.

There have appeared many “new comers” on both sides of market (banks and farmers) and transacting parties usually do not know each other (no history of relations, trust is to be built). Costs for a first contract between unknown market counterparts are much higher than for transacting with a high recurrence (“history”) between same partners (where keeping relationships has a special value).

Consequently, in transitional conditions of big uncertainty, high information asymmetry, and strong incentive for opportunistic behavior (survival consideration, reputation does not matter), market has failed to organize effectively credit supply in agriculture [Bachev and Tsuji]. Moreover, farms have access only to market *dept* financing since *equity* market for trading agrarian shares have not developed at all in the country[49].

Only one-fifth of farms use *commercial banks* for funding short-term assets as share of farms using market for long-term capital procurement is twice lower. Agro-firms and larger farms employ to a greater extent the loan contracts for short-term finance supply. These farms can better meet market criteria for efficiency and for high collateral requirements. Besides, they have a superior ability to face sunk costs for finding a creditor and for completing loan agreements.

Creditors have preferences to formal registered farm organizations which liabilities could be easier (than Physical persons) challenge in court throughout a longer period of time (the effective “life of investments”).

The long-term credit market entirely “fails” for small farms. Large farms also do not prefer “pure” market forms for financing long-term activities since they have access to more economical modes for external finance (direct investment, joint venture).

For majority of farms the main reason for choosing market mode for short-term and long-term finance is “the best interest rate and terms of credit”. It means that market (price) mechanisms govern well transactions for finance supply in these farms. Thus, majority of surveyed farms using commercial banks for finance procurement work according to the “rule of competition” meeting efficiency (pay–back) requirements and fulfilling financial obligations.

Another major reason for selecting that form, especially for long-term credit users, is the “lack of need to pay for successful project for financing”. That proves that market than other “hidden” price mediates effectively relations between the supplier and debtor.

However, for a great part of farms market form is the single (only possible) form for outside financing since “there are no other outside suppliers in the region”. Moreover, the latter farms have a single external lender as well as being in a situation of unilateral

[49] That could be also easily explained by transaction cost reasons [Bachev 2004].

(funding) dependency. Consequently for a good number of farms there are only two (extreme) forms available for funding of long-term activities – internal (own) supply and ("free") market mode.

For a significant part of debtors of the bank short-term credit the "tradition" also plays an important role. Long-term customer relationships between a farm and a bank are coupled with development of relation-specific capital. It helps overcoming problems of information deficiency (asymmetry), builds confidence between partners, restricts pre- and post-contract opportunistic behavior, and ultimately minimizes the overall transacting costs for financial supply.

Almost 74% of short-term credit users and a half of the long-term debtors of banks indicate they are able "always or often" to find external financing when it is necessary. It means that transacting costs for market mode for employing-farms are relatively small.

In environment of high economic and behavioral uncertainty other specific forms have also emerged to facilitate agrarian credit supply. *Share financing* of investments with a loan from banks and own sources is commonly used – accordingly by 62% of the long-term credit users and one-third of the short-term creditors. This special (mixed) mode of finance supply increases farmers incentives for effective use of investment, divides risk between banks and users, and economize on total governance costs.

According to the specific characteristics of clients different levels of credit volumes and equity requirements are practiced. Besides, sources are usually own used for financing of more farm-specific assets (e.g. land and land improvement) while credits are directed to finance more universal and liquid assets. The internal financing is also necessary to secure effective collateral for lending contracts which is generally demanded to recover bank losses in case of investment failure.

Correlation between own and bank financing is lower for short-term credit users where 67% of bank users do not match credit supply with internal funding. Here "future crop" is usually used as a guarantee ("yield as collateral") for loan contracts.

Besides, bank often explicitly requests "purchase of insurance" to be made by credited farms. For instance, a half of the short-term debtors are obliged by relevant banks to buy an insurance for vegetable yield, 31% for cereal harvest, and 11% for milk-cows. Such insurance is also requested for one-forth of cereals producers and one-third for cow owners which use long-term credits from banks.

Since the risk of crop failure is immense lending banks require their collateral (future yields, milking-cows) to be protected ("insured") from possible losses. Despite there unwillingness farmers have to pay the supplementary price for insurance supply in order to

obtain needed (interlinked) bank credit. In this case the risk is carried by a specialized market supplier (insurance company rather than the bank) and debtor-farms are charged with extra (transaction) costs to assure bank loans.

Another interesting form which has developed is to get “free agro-market information” from crediting bank – correspondingly 11% and 25% of farms using short-term and long-term credit. In this case farms receive “for free” additional service supply in package (interlinked) with the credit supply contract.

Banks gather or buy such information since it is vital for their investment, lending etc. decision-making. They offer this information to farms since they are interested in high efficiency of their clients investments (and timely return of banks loans). Here, economy of scale for organization of agro-market information supply is realized by bank and farms get specialized information supply though (in package with) lending contracts. This governance mode provides individual farms with a service which otherwise would be very expensive (to buy from market or to supply through a special private organization) or not available at all (blocking of market information supply transactions during first years of transition).

Independent to existence of lending contracts, some of surveyed farms report getting other “free services” from banks – technological knowledge and advises, advises on protecting from diseases and predators, veterinary assistance, and farm management counsels. Farming related services of banks are extending along with expansion of their agrarian credit activities and the number of their prospective customers.

Despite “enormous” development of agrarian credit markets since the beginning of transition, the majority of farms still do not use market for organization of their financial supply. In some instances market mode happens to be quite expensive – e.g. “too high” interest rate and other related “payments”, lost flexibility (and efficiency) of agrarian recourses put (as collateral) under bank’s control. In other cases, market form has not been accessible at all - missing market situation.

Furthermore, recent financial crisis strongly limited available financial resources on the market and increased the costs of borrowing. Subsequently, farms have been looking for and designing more efficient *non-market* (private, trilateral, hybrid) forms for outside finance supply.

A main form for external funding for majority of surveyed farms is *“some kind of state program for agriculture”*.

During the entire transition period agrarian credit market was blocked in the country and *Government intervention* in finance supply “made” carrying out farming possible. The

government assistance has been predominantly directed to providing preferential credit for working capital for particular productions (mainly cereals).

In last years before EU accession preferential long-term funding programs have been also made available for some priority areas (e.g. growing vineyard, purchasing machinery, modernization rural infrastructure, recovering traditional productions etc.).

Most public programs come with a subsidized interest rate, facile terms and collateral requirements. Schemes with a partially granted-credit have also been introduced recently (part of the loan is forgiven after investments are made). Thus along with necessary credit the farms get "additional" financing through a subsidized loan price, forgiven debt, or increased flexibility of own resources.

In most cases, there is a requirement for sharing investment (and risk) by financed farms aiming to increase incentives for efficiency. What is more, since 2000 "cross-compliance" requirements ("good farming practices", eco-conditionality) have been obligatory for participation in public support programs. That is why the latter form of public crediting (subsidizing) proper farming activity is also a specific (interlinked) mode for public payments for additional (e.g. environmental) services by farmers[50].

Public supply form is preferred by most of using farms because of the "best interest and term". However, the best collateral and paper works associated with public mode is also an important for a good number of applying farms.

Different types of farms do not have an equal access to public funds for financing activities. Our survey demonstrated that major beneficiaries of preferential short-term credit are registered bigger farms. These farms have larger needs for working capital and are very active looking for cheap external funding. They have also got better experience in preparation of project proposals and lobbying for their selection. Besides, these farms develop a special relation-specific capital with funding agencies (personal ties, good reputation) and have effective capacity for "under the counter" payments (bribes) for projects approval. Finally, larger farms are more important in political and economic respects (powerful agents, major suppliers for internal and export markets) and therefore have easy access to Government support.

Nevertheless, larger farms do not use much the public mode for funding long-term assets. They have either greater internal capacity (profit generation, equity sell) to cover

[50] Nevertheless, the actual compliance to most of the new standards for animal welfare, biodiversity and environmental preservation etc. has been low because of the unawareness in farmers and public officers, high enforcement costs, insufficient administrative capability, and lack of political will [Bachev 2008].

their long-term needs or an effective access to cheaper outside sources for financing (private investors, banks etc.).

The formal status and the "registration" of farms is important for executing agency since it is easier (less costly) to check the history and the reliability of farms, and to enforce the legal agreements and liabilities.

For a good number of surveyed farms state funding of long-term assets is the only way for external finance supply. This mode is vital for a significant number of farms since 53% of the users of long-term and 17% of the users of short-term credits from State programs do not have internal financing at all. Farms getting funding through public form indicate that mode is a cost-effective for meeting their financial (short and long-term) needs - all involved farms "always or often" have an access to outside financing when it is necessary.

Part of State financing comes through *hybrid modes*. In some instances, these modes are purely public forms – when an international (e.g. European Union, World Bank, other donor) funds for farming support are match (shared) by the Government contribution (e.g. SAPARD, NAPARD etc.). In other cases, public credit goes through private banks. The later hybrid mode allows minimizing the overall costs for public lending since programs are executed (and risk bearded) by specialized private agents. Banks are much more efficient than public agencies in servicing credit supply, selecting clients, controlling contract terms, monitoring loan repayments, securing collateral etc[51]. In some cases the risk is assumed by the state agency against acquisition of agricultural land since most banks do not accept farmland as collateral.

Other forms have also been practiced for direct or indirect public financing of farm activities: assisting farm associations and funding their activities; exemption form taxes on agricultural land and farm activities; guaranteed minimum prices for some products (e.g. tobacco); providing free agro-market information and extension service supply; public funding of agrarian research and innovation etc.

These *trilateral* modes either assist (public funding, public in-house production, public provision etc.) important agrarian transactions which could not be carried out effectively through market or private modes; or accelerate development of "private" (or quasi-public) organization for collective supply which otherwise would not emerge; or they are associated with securing additional own (internal) finance for farms.

Other instruments have also been used to facilitate market and private financing.

[51] For instance, the big number of bad dept-holders from SFA, the large share of unused (and later on canceled by EC) funds from SAPARD - to name just two "good" examples for low (bad) operational efficiency of public agencies in farm crediting.

For instance, a system of “trade with receipt on deposited grain in public warehouses” has been institutionalized. That has made possible separation of the moment of marketing from the inputs supply transactions. Consequently farms are able to use grain-receipts as a collateral and to get a short-term lending for working capital while looking for the most favorable date for marketing (usually grain prices are lowest after harvesting time when needs for working capital for next season is high).

A great number of smaller and mainly non-cooperative farms get outside supply from *“European Union, World Bank, or another international farm program”.* Targeting such weak (vulnerable) farm groups has been a policy priority for donors programs. In fact, up to EU accession in 2007 for all users of that mode of short-term finance, and for a significant share of long-tern debtors, that is the single mode available for external funding. Moreover, a great share of farms using above mode does not apply (have) any internal financing of activities. Other major reasons for short-term funding users for selecting that form are the simplified procedures and the lack of side-payments.

In addition to that, the best interest rate and terms (unusually preferential) are also important factor for long-term debtors in choosing an international supplier. All participants in long-term international lending program point out there are able to find “always and often” external financing they need. Conversely, less than 12% of users of that mode are positive about their short-term needs.

That is partly associated with a (long-term assistance) policy priority of donor agencies, partly with low costs for supervision of the efficiency of utilization of received loans. While it is easy to monitor the acquisition of new machinery, building of farm facilities, the real investments in working capital are often quite expensive to verify (e.g. amount of paid salaries, fees for services, short-term inputs in land etc.).

Since the beginning of transition there have been a number of international institutional, Governmental, NGO`s etc. initiatives targeting farming in some regions (mountains, borders, less populated, undeveloped); or minority groups (Turkish, gypsies); or young (future) farmers; or segments of population (handicaps, drug users); or with specific purposes (education, extension, demonstration).

All these forms for *international intervention* has come out to fill the gap when a national third party (Government, local authority, private) involvement in farm finance supply either failed (capacity and competence deficiency, lack of budget recourses) or has not been quite efficient (bad planning, mismanagement, corruption).

For different types of surveyed farms there are diverse *reasons for selecting the mode of a financial supply*.

For majority of farms the most important factor for short-term credit supply is the immediate payments (best interest) and the terms related to financing. Dominant “market” criteria are essential for a good part of the registered middle-size farms as well. It means that *official price* and conditions (*competition* for available market and institutional sources) govern well the financing supply.

However, for a big fraction of farms economizing on overall transacting costs (e.g. related paper works, side payments) is also important for choice of financing mode. In addition, receiving interlinked services and the tradition are crucial for larger operators. The later modes are associated with extra transacting benefits and further cost cuts.

Nevertheless, for a great proportion of farms there is no alternative form for financial procurement. These farms do not have an access to another supplier, and they either have to accept financing situation (internal restrictions, bilateral relations, or monopoly situation) or to reduce farm size.

Frequency of finance supply transactions “with a particular partner” (or “mainly with the same partner”) is quite high for all type of farms.

High recurrence of relations between the same parties minimizes transaction costs since there are strong mutual incentives to continue bilateral relations and self-restrict opportunism. Besides, it is efficient to invest in relation-specific capital (building good reputation, gathering information about counterparts, developing trust and mechanisms for coordination, interlinking of exchange) because such costs can be easily recovered by multiple transactions.

No more than 9% of surveyed farms report they “use many suppliers” for short-term and 12% for long-term crediting. As far as short-term financing is concerned, those are mainly large farms which have bigger needs for funding. They diversify suppliers according to investment characteristics (and minimize total costs for finance supply), or perform a strategy to avoid dependency from a sole lender. For long-term supply, these are predominately middle-size firms which can not assure their growing financial needs (associated with the strategy for expansion) from a single supplier.

“State program” and “cooperative, farm organization” are chief short-term lenders for most farms indicating they use “always or mainly the same supplier” (80% and 64% accordingly). High frequency with “commercial banks” and “relatives, friends” is important for short-term financing of 39% and 28% of farms while recurrence of funding with outside investors is reported by few farms.

For long-term repeated financing major sources are: “outside investor” (74%) and “State program” (52%). “Cooperative, farm organization” and “relatives, friends” are

significant for a good number of farms with unchangeable lenders (36% and 31% accordingly) while “foreign investor” - for around 7% of them.

The regular (frequent) transactions between the same partners is an important factor for costs saving for both sides. Therefore, the above figures give some ideas about the most likely external creditors for further enlargement of farms.

Organization of finance supply from a new supplier is usually associated with large costs (to find a “good” lender, negotiate satisfactory contract terms, present reliable guarantee, pay premium interests or side payments etc.). That is why no short-term funded farm and lees than 9% of long-term externally financed users “change partner every time”. Mostly smaller (exclusively unregistered and firm) farms look for a new supplier since they are having greater problems to find external funding (new comer, no proper collateral, greater financing needs for modernization and extension etc.).

According to the managers of surveyed farms *“the relationships with banks and the preparation of projects for crediting”* takes high efforts and time for all farms (Table 5).

For various types of farms the overall transacting costs for credit supply (both for “successful” and “failed” projects) are different. Their level is greatest for majority of large farms and firms, many middle-size farms and cooperatives, and a good number of unregistered and small farms.

Different farms have unequal needs for external finance and divers potential (skills, reputation, ties) to govern credit supply. Nonetheless the superior amount of related costs in larger farms, their relative level (for a unit of transaction) is smaller since they can explore the economy of scale (and scope) on credit supplying activity (e.g. investing in specialized human or relation capital for dealing with lending agencies; negotiating a package credit contract for funding a number of activities etc.).

Moreover, credited farms spent different efforts to deal with various suppliers. Only a minor share of farms with lenders outside investors, international program, and long-term banks and State program, report high efforts devoted for credit supply deals. At the same time, a relatively large portion of farms with high efforts are debtors to State and bank short-term crediting program, and “cooperative, farm organization” financing.

The short-term financing from major suppliers is associated with larger transacting costs for farms because of the “short-term” nature of contract (and needs for periodical re-contracting). Besides, transactions with outside investors are much more smoothly given the existing high bilateral (assets) dependency and the strong incentives to reach a deal with minimum costs.

Lastly, transacting efforts with international donors are small since these programs are strongly prioritized for particular type of farms - here “small number condition” prevails on both sides.

For majority of surveyed farms “high collateral requirement” is the main *factor limiting the financial supply*.

Most agrarian assets are highly farm-specific and therefore less suitable to be used as a guarantee for outside (e.g. non agrarian) supplier. Market value of such property is much lower than its in-farm significance. Thus external supplier wanting to safeguard lending transactions against possible opportunism (misuse, delay of return, or expropriation) demands “too high” securities from the farm’s point of view. Hence such a high requirement for “economic hostages” (or “unequal” exchange) restricts or even blocks the credit supply contracts.

Yet another critical factor for numerous farms is the high price (interest and terms) of credit resources. Apparently many farms can not use financial funds effectively according to market criteria or requirements of lending organizations.

Significant share of surveyed farms feel there is “no enough agrarian credit available in the country”. The high transaction costs make difficult the emergence of market and private modes for credit supply, and plentiful farms still have no access to external financing.

For some part of farms “shortage of information about finance opportunities” is a principal reason complicating credit supply. Obviously information asymmetry is quite high in the area and for many farms it is too expensive (impossible) to get necessary information for funding possibilities.

Finally, some farms face enormous credit related costs (for preparation of proposals, bureaucratic procedures, payments of fees and bribes etc.) which limits or make impossible finance supply transactions.

Furthermore, a number of *unwanted forms for off-farm finance supply* have been broadly practiced. *Delay of payments* or *non-payments* by downstream partners (middlemen, processors etc.) has been widespread. That is in fact unwelcome (usually interest free) crediting of trading partners by farms. For the reason of strong unilateral dependency (monopoly) and (or) high enforcement costs of contracted terms (through inefficient and expensive court system) farms has to accept that form of “subsidized marketing”.

Most farms with “bad experience” in that respect either under-invest in specific capital (changing or diversifying production structure, decreasing operations scale) or look for

more efficient forms for governing of (marketing) transactions such as requiring deposit and advance payment, using own organization (marketing cooperative) or personal contacts, internal integration (in-farm processing), joint investment with trading partners etc.

Furthermore, a number of undesired off-farm "financing" has been a common place as funding of private activities of corrupted government officials (informal stakeholders), or special interest groups in cooperatives and agro-companies; buying "security services" of criminal firms; loosing large equity or deposits in bankrupt banks and joint ventures etc.

Accession of Bulgaria to EU and CAP implementation provides new funding opportunities for farms (for "agrarian and rural development", "direct area-based payments to farms", and "market support"). There is significant public financial resource for subsidizing farms, individual productions, farming organizations and essential activities such as: modernization, commercialization and diversification of farming; revival of traditional production and heritages; introduction of organic farming; maintaining biodiversity and environment; improving food safety and animal welfare; support for less-favored areas and regions with environmental restrictions; infrastructural development etc.

Available huge EU and national financing opens up new possibilities to resolve funding problems of agriculture (Figure 10). Nevertheless, due to restrictive criteria, unattainable formal requirement, high costs for participation, and widespread mismanagement (and corruption) the new public support is not effectively utilized and benefits unevenly different farms.

In 2007 no public payment was made for projects associated with NPARD measures but area based payments for regions with handicaps. The progression in implementation of public support since 2007 has been very slow and far behind the targets (Table 12). Besides few successful areas[52], the number of approved projects and public contracts has been insignificant while the amount of actually funded projects even smaller.

What is more, the bulk of the public contracts and funding continues to go to a limited number of farms and many effective small-scale farms receive no or only a tiny fraction of the public support [Bachev 2010].

[52] Measure 112 "Setting up of young farmers", Measure 211 "Payments to farmers in mountainous regions with handicaps", and Measure 212 "Payments to farmers in regions with handicaps different from mountainous".

Table 12. Progress in implementation of 2007-2013 NPARD in Bulgaria

Measure code	December 31, 2008				December 31, 2009				August 23, 2010			
	Approved projects	Funding 000 Euro	Paid projects	Funding 000 Euro	Approved projects	Funding 000 Euro	Paid projects	Funding 000 Euro	Approved projects	Funding 000 Euro	Paid projects	Funding 000 Euro
111	0	0	0	0	0	0	0	0	15	764	0	0
% target	*0*	-	*0*	-	*0*	-	*0*	-	*na*	-	*0*	-
112	461	10616	41	512	2261	53009	1435	17974	4085	102125	4031	50384
% target	*11.25*	-	*0.10*	-	*55.20*	-	*35.03*	-	*99.73*	-	*98.41*	-
121	365	60933	0	0	1502	156169	576	71427	1920	247476	1274	153950
% target	*6.77*	*6.27*	*0.00*	*0.00*	*27.86*	*16.09*	*10.69*	*7.36*	*35.62*	*25.49*	*23.64*	*15.86*
122	0	0	0	0	0	0	0	0	0	0	0	0
123	0	0	0	0	0	0	0	0	36	23829	2	1638
% target	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*5.81*	*4.41*	*0,32*	*0.30*
141	0	0	0	0	0	0	0	0	708	5310	671	10059
% target	*0*	-	*0*	-	*0*	-	*0*	-	*3.37*	-	*0.32*	-
142	0	0	0	0	0	0	0	0	0	0	0	0
143	982	2	982	2	2525	779	2525	779	6621	2132	6621	2132
% target	*3.62*	-	*3.62*	-	*9.30*	-	*9.30*	-	*24.38*	-	*24.38*	-
211	24026	23882	24026	23882	26104	41978	26104	41978	26104	na	26104	na
% target	*40.04*	-	*40.04*	-	*43.50*	-	*43.50*	-	*43.50*	-	*43.50*	-
212	10017	7562	9977	7562	10785	12137	10785	12137	10785	na	10785	na
% target	*100.17*	-	*99.77*	-	*107.85*	-	*107.85*	-	*107.85*	-	*107.85*	-
214	1120	4839	1058	2448	1781	5034	1781	5034	1781	na	1781	na
% target	*2.80*	-	*2.64*	-	*4.45*	-	*4.45*	-	*4.45*	-	*4.45*	-
223	0	0	0	0	20	610	0	0	37	2320	0	0
% target	*0.00*	-	*0.00*	-	*1.00*		*0.00*	-	*1.85*	-	*0*	-
226	0	0	0	0	18	848	0	0	23	1107	23	1107
% target	*0.00*	-	*0.00*	-	*0.90*	-	*0.00*	-	*2.30*	-	*2.30*	-
311	0	0	0	0	0	0	0	0	4	425	0	0
% target	*0*	-	*0*	-	*0*	-	*0*	-	*0.09*	*0*	-	-
312	0	0	0	0	0	0	0	0	88	13832	0	0
% target	*0*	-	*0*	-	*0*	-	*0*	-	*2.09*	-	-	-
313	0	0	0	0	0	0	0	0	0	0	0	0
321	0	0	0	0	72	123461	0	0	123	197446	94	78487
% target	*0.00*	-	*0.00*	-	*4.77*	-	*0.00*	-	*8.15*	*46.19*	*6.22*	*18.36*
322	0	0	0	0	144	81208	0	0	156	89771	133	37819
% target	*0.00*	-	*0.00*	-	*18.00*	-	*0.00*	-	*19.50*	*43.07*	*16.62*	*18.14*
431-32	0	0	0	0	0	0	0	0	103	8461	11	142
% target	*0*	-	*0*	-	*0*	-	*0*	-	*7.92*	-	*0.84*	-

Source: Ministry of Agriculture and Food

Chapter 14

6. MANAGEMENT OF FARM INSURANCE SUPPLY

During much of the transition Bulgarian farms had no access to specialized insurance products since they were either unavailable or too expensive [Bachev 2000].

Agrarian insurance market has been developing in last several years but it is not widely used by farms. Our survey has proved that the only exception is insuring against *"bad meteorological conditions"* (hail, frost etc.), and *"fires and natural disaster"* which are practiced by a great number of large cooperative and business farms (Table 13).

The larger farms have stronger incentives to *sell the risk* because they are highly specialized huge operators, and in the case of a risky event damages are significant. Besides, they have bigger financial means to insure crops, animals, and related assets. In some cases, they are in position to negotiate more favorable terms than bulk of the farms (big contracting power, economy of scale, available on farm experts or outside expertise).

Moreover, a "purchase of insurance" is usually explicitly requested by banks and/or public agencies for participating in diverse commercial and public support programs. The main users of short-term (bank, Government) credits are the big cereals farms. Similarly, long-term credits are mostly taken by the larger grain, fruits and grape producers.

Since the risk of crop failure is immense the lending banks or public agencies require their collateral (future yields, milking-cows, vineries) to be protected ("insured") from possible losses. Despite (un)willingness the farmers have to pay the supplementary price for insurance supply in order to obtain "interlinked" outside funding. In this case, related risk is carried by a specialized market supplier (insurance company rather than bank or public agency) and debtor-farms are charged with extra costs to assure needed bank loan or public support.

The rest of the farms use *other forms* to insure their products and assets such as: diversification of production, geographical remoteness of individual plots, hiring full-time specialists (e.g. pest control expert, agronomist), employing private security guards etc.

Table 13. Governing of insurance supply in farms (percent of farms)

Objects	Type of insurance	Unregi-stered	Coopera-tives	Agro firms	Small	Middle size	Large
Grain	Burglary	6,25	14,29	0,00	6,25	4,55	12,50
	Bad meteorological conditions	18,75	60,71	71,9	28,13	54,55	81,25
	Diseases and pests	6,25	21,43	18,7	3,13	29,55	0,00
	Fires and natural disasters	31,25	71,43	87,5	37,50	75,00	81,25
Vegetables	Burglary	0,00	0,00	6,25	0,00	4,55	0,00
	Bad meteorological conditions	6,25	0,00	12,5	6,25	0,00	25,00
	Diseases and pests	3,13	0,00	0,00	3,13	0,00	0,00
	Fires and natural disasters	3,13	7,14	0,00	3,13	4,55	0,00
Fruits and grape	Burglary	18,75	0,00	21,9	18,75	15,91	0,00
	Bad meteorological conditions	3,13	32,14	21,9	3,13	27,27	25,00
	Diseases and pests	15,63	17,86	3,13	18,75	11,36	0,00
	Fires and natural disasters	3,13	25,00	21,9	3,13	22,73	25,00
Meat animals	Burglary	9,09	35,71	30,0	8,00	28,00	66,67
	Bad meteorological conditions	0,00	7,14	5,00	0,00	8,00	0,00
	Diseases and pests	0,00	14,29	15,0	4,00	8,00	33,33
	Fires and natural disasters	0,00	28,57	0,00	0,00	16,00	0,00
Milk animals	Burglary	0,00	21,43	50,0	0,00	36,00	66,67
	Bad meteorological conditions	9,09	7,14	0,00	8,00	4,00	0,00
	Diseases and pests	9,09	28,57	15,0	12,00	16,00	33,33
	Fires and natural disasters	0,00	42,86	0,00	0,00	24,00	0,00
Others	Burglary	0,00	7,14	0,00	0,00	4,55	0,00
	Diseases and pests	2,70	0,00	0,00	2,70	0,00	0,00
	Fires and natural disasters	8,11	14,29	0,00	10,81	6,82	0,00

Source: interviews with farm managers

In Bulgaria there is not an effective public system (police, municipal guards, court etc.) for protection and recovery of ("absolute rights") and punishment of offenders. Farmers are among the most vulnerable for individual thieves and organized crimes since much of farm outputs and property is "in the open", and dispersed in wide areas and many locations.

Therefore, agrarian property is widely assured by *private modes* and “costs for protection” for all surveyed farms are significant in terms of time and resources spent, hired security guards and services, “payments for property protection and restoration” etc.

A good number of small farms do not use any *public (collective) modes* for insuring risk and face constantly severe hazards and damages.

The main reasons for avoiding market supply of insurance are the high (unaffordable) premiums, unfavorable terms of insurance contracts (not-tailored to particular conditions of an individual farm), and low satisfaction from the services of commercial insurance providers (frequent disputes about the terms of contracts and extend of harms, lengthy delays of payment for damages etc.).

Consequently, a great part of farming resources and activities is not assured (insuring labor is practically absent, most animal, machineries and buildings are uncovered etc.), and a considerable majority of farmers bear the entire risk of failures.

Despite the potential efficiency (non-for-profit organization, members orientation, tailoring products to farms needs) the collective modes for farm insurance have not evolved in the country. Here the high transaction costs for initiation and development of large member organization, and conflicting interests of different farms etc. impedes that process.

Moreover, an effective public intervention has not been undertaken to assist (initiate, support, legislate) farmers in organization of (“quasi-public”, “quasi-private”) mode for collective supply of agrarian insurance. Neither badly needed agrarian guarantee and/or compensation fund has been launched. Subsequently, a good part of affected smaller and middle-size farms (having little internal capacity to bear yield failures and property damages) experience severe looses, and see the scale of their operations (assets, financial means) and welfare further decreased.

In last few years, the public veterinary, disease, technology etc. control and emergency assistance to farms have been enhanced - e.g. isolation and distortion of endangered animals, compensation of farms etc. These measures aim at protecting against significant industry and/or public risk(s) from certain diseases and epidemics – e.g. mad cow disease, foot and mouth disease, avian influenza etc. They have been driven by the public concern for potentially huge economic losses for farms, related industries, export, and/or human health hazards.

Furthermore, some farms have got public aid to cover losses (or recover) from recent natural disasters – floods, rainstorms, mudslides, and extreme droughts. The later modes

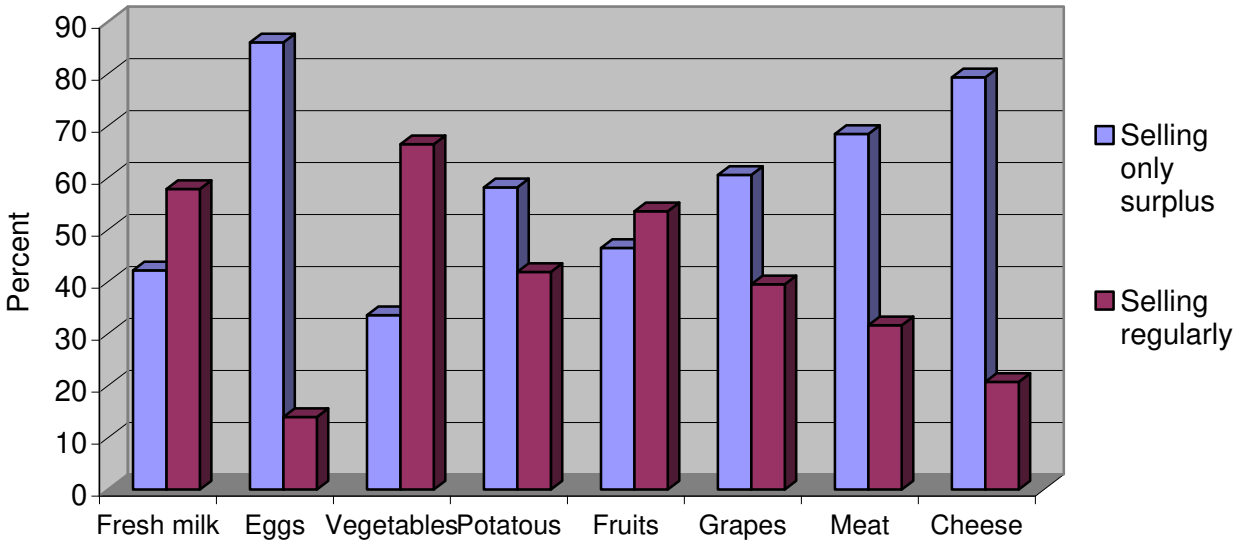
have been incidental and affected mostly larger operators having incentives and capacity to deal with complicated (and costly) bureaucratic procedures.

Finally, competition in insurance industry has been increasing in recent years (including with foreign players). The later leads to an enlargement of the range of specific products offered for meet diverse insurance needs of farms. Nevertheless, the high assurance and related costs, and the targeted (to larger operators) policies of insurance providers make these products inaccessible to a great fraction of Bulgarian farms.

Chapter 15

6. MANAGEMENT OF MARKETING OF FARM PRODUCTS

A significant part of Bulgarian farms sells only surpluses of major commodity products (Figure 22). The portion of subsistence and semi-market farms among censured unregistered holdings is particularly high as less than thirty nine percent of them report selling products and for more than fifty percent those are surpluses not consumed by households [MAF].



Source: MAF, Agricultural Holdings Census, 2003

Figure 22. Share of farms selling regularly and only surpluses in Bulgaria

Majority of surveyed farms market their output through some form of *sell out deals* as share of output governed by that mode of realization accounts for a significant part of the brut output of farms (Table 14). Most farm produces have “mass” standardized character and therefore *free market prices* or *standard sell contract* (spot market or wholesale market deals, classical contracts) govern effectively relationships with buyers.

Insignificant number of farms manages their marketing trough a *special long-term contract for outside processing.* However, portion of the output governed with such special mode reaches a good part of the overall output in respective farms. That form is most common for large farms.

Necessity for a special contract form for governing the long-term relations with processing industries is caused by a high frequencies of transactions between same partners, big transacting uncertainty (price, behavioral), and existence of some form of asset dependency with downstream partners. High mutual (capacity, time of delivery, quality specifications) or unilateral dependency (negotiation power, monopoly situation) is often responsible for the preference to a special private mode for carrying out of farm marketing. Simple sells across “free” market would create serious transacting difficulties and could restrict or entirely block marketing. Therefore, instead of unreliable (and expensive) spot or classical contract, a long-term *delivery contract* is used to overcome transacting problems and minimize related costs.

Complete (in-farm, ownership) *integration* is the most effective mean to govern “marketing” for highly dependant transactions when possibility to realize economy of scale (or scope) could be effectively explored within farm boundaries. Instead of (off-farm) marketing *in-farm production consumption* (diversification into inputs supply) or *in-farm processing* (diversification into processing activity) take place.

Number of surveyed farms which entirely integrate “output realization” (within farm boundaries) is great as share of output governed in that way is significant. For instance, almost *all livestock* farms integrate the *forage production*, one completely different (namely a crop production) activity, overcoming of big uncertainty and risk associated with critical to livestock operations market or outside supply.

The *vertical integration* is an effective *alternative way for optimization of farm size* to horizontal (one or more products) enlargement of farm boundaries. When it is too costly to trade on open (free) market for inputs procurements or marketing of farm outputs (big uncertainty, high unilateral dependency and possibility for opportunistic behavior, missing markets situation) then *internal organization* (in-farm production, in-farm processing) is an effective managerial response to market and/or contract “failures”. In-farm integration of transactions would be undertaken only if there is a significant costs economizing potential comparing to off-farm trade.

.

Table 14. Directions for realization of outputs of farms (percent of farms)

Type of farm	Share of farms using output for:					Share of brut output for:				
	Household consumption	In-farm consumption	In-farm processing	Long-term contract for outside processing	Sell	Household consumption	In-farm consumption	In-farm processing	Long-term contract for outside processing	Sell
Unregistered	81.08	40.54	21.62	5.41	100.0	18.57	18.00	16.25	10.00	73.59
Cooperative	46.43	64.29	14.29	3.57	100.0	12.46	24.00	19.50	40.00	74.93
Firm	43.75	56.25	40.63	6.25	78.13	20.79	26.11	38.08	10.00	76.96
Small-size	86.49	45.95	16.22	0.00	100.0	20.09	18.53	18.33	0.00	71.14
Middle-size	40.91	40.91	31.82	4.55	93.18	16.78	34.00	25.93	10.00	75.68
Large	43.75	43.75	31.25	18.75	75.00	9.29	35.00	46.00	20.00	84.17
Total	58.76	43.30	25.77	5.15	92.78	17.72	27.90	28.12	16.00	74.94

Source: interviews with farm managers

However, internal organization of new and not-specialized activities (diversification into new production, processing, retailing) is inevitably associated with an increase on internal transaction and/or production costs. When these costs are prohibitively high comparing to the benefit then internal organization fails, and activity is not carried at "effective" scale or blocked at all ("small" farms, backward technology development, unsustainable structures etc.).

"Own consumption" or *"giving to relatives and friends"* has been traditionally a basic mode for realization of output which is still dominating in majority of surveyed farms. This form of "direct marketing" is associated with low or zero costs (no searching costs, easy planning of demand, facile exchange), and a number of extra benefits such as non-for profit activity, full information about technology and origin of produce, interlinking with other activities etc.

Finally, a good part of surveyed farms take part in service providing transactions. This form of *marketing of farm services* (instead of farm outputs) is more common for cooperatives and firms, and middle-size and large farms. Agrarian services occupy around 13% of the product of service supply farms. Thus involvement in this kind of contracts is associated with utilization of free equipment and labor rather than with investment in specific assets for organization of agrarian services. In these instances, it is equally unprofitable (high transacting costs) both trading of temporally free resources (leasing out of equipment and machinery; selling out labor) and further specialization into services (service trading).

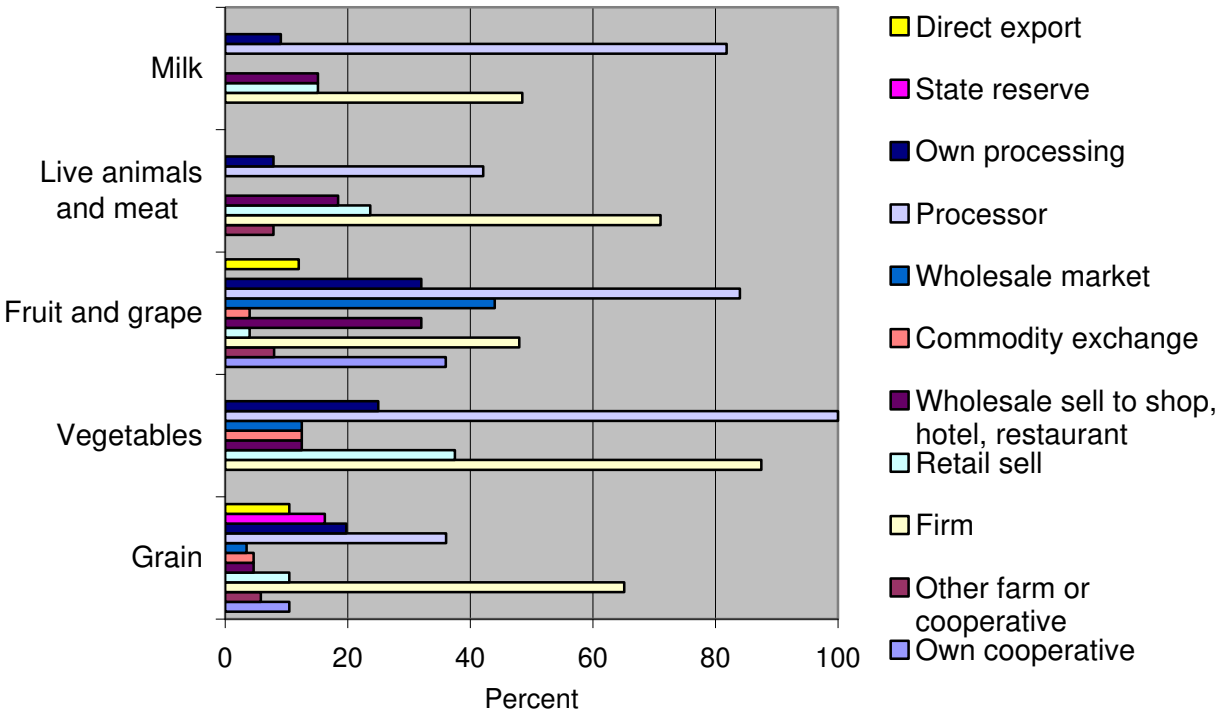
Dominant modes for governing of marketing are quite specific for different farm products (Figure 23).

Some *market agent* (mainly firms, and to the less extend farms or cooperatives) is broadly used for marketing of all products. That form is more often used for marketing of vegetables, grains, and meat from all type crop and livestock farms. Here standardization of products and technologies is higher, and thus market (prices, quality standards, competition) governs effectively relations with downstream partners. There is no any need to develop or use any special (private) form to carry out transacting, and the classical trade (across market) with a specialized market agent (a middle man) dominates.

When specificity of farm products to a particular buyer (e.g. processor) increases then direct *marketing contracts* with respective partners are commonly used.

Firm-processor is the major buyer for *vegetables, fruits and grape, and milk* for all kind of farms. Since product specification (special technology, special origin, special time

of delivery, freshens) is important for a particular buyer(s), and strong *site-specificity* is in place (single buyer in the region, big capacity dependency), and frequency of transacting with a particular partner is high, facilitating vertical links through direct and tight-up delivery contracts is important for both sides.



Source: interviews with farm managers

Figure 23. Modes for marketing of major farm outputs (percent of farms)

Marketing relations are usually coupled with development of specific capital for trade with the particular partner (modes for planning of production and deliveries, controlling qualities, dispute resolutions, interlinking marketing with finance and/or inputs supply). Such *quasi integrating* modes intensify and harmonize relationships, and minimize overall transaction costs for processor and farms alike. Tight-up marketing contracts with a firm-processor are also practiced by a half of middle-size livestock farms for *meat* sells, and by a three-forth of large crop farms for *grain* trade.

Furthermore, closely coordinated contracts for *wholesale marketing to shops, hotels, and restaurants* are also often applied when control on freshens, origin, quality, tile of delivery etc. of farm products is especially important – mainly *fruits and grape*, and *meat;* and to lesser extend *milk* and *vegetables*. This mode of marketing is particularly

widespread in management of relations between large agro-firm meat producers and such wholesale counterparts.

Direct export is carried out by one tenth of *grain*, and *fruit and grape* producers. That forms permit to realize full benefits from trading at international markets when profit margin is quite significant (wheat, sunflower, fruits and grapes with special origin and quality etc.). Direct export is practiced by relatively larger farms which could make and return-back investment in specialized capital for such trade (e.g. experience, market information, personal ties, special origin and quality of products etc.).

"Best prices", "low costs", and *"maximum security"* are main reasons for preferring the form of marketing to "another farmer, cooperative or firm" by all type of surveyed farms. Besides, a good part of farms report they have "many buyers", and therefore faceless (rather than personal) relations dominate and the market mediates effectively transactions between agents.

Frequency of deals with "the same partner" for a large share of farms is high: 37% of them "mainly" or "always" sell to the same agent, and only 2% of farms change the buyer every time (season). Big repetition of relations between the same counterparts restrict information asymmetry and opportunistic behavior, develop mutual trust and mechanisms for facilitating transactions (modes of planning, payment, guarantee, dispute resolution), and diminish the overall transacting costs. That is why for the larger operators the constant trade with a single buyer is the main mode for organization of marketing deals.

Traditional form of *wholesale market trade* is used mainly by *fruits and grape*, and *vegetables* producers. Here standardization of products is quite developed and critical quality margins easily (cheaply) controlled by anonymous traders. This mode is more significant for the middle-size firms while majority of surveyed farms still more rely on other effective ways for marketing of outputs.

Number of farms employing *commodity exchange* for marketing of output is even smaller. It concerns mainly some *vegetables, fruits, and grains* which have commodity (highly standardized) character and where (current and future) trade is not associated with great transacting (fees, measurement, enforcement, disputing etc.) expenses.

Main motives for selecting the wholesale market by majority of using farms are the *"best prices", "low costs",* and *"minimum risk".* That mode is most important for middle-sized unregistered and cooperative farms. For all farms applying wholesaling the repetition of marketing on a particular market is rare (place is changed every time). It means that accessible (regional) wholesale market (s) do not give equal opportunities and farmers

have to select (change) particular market according to their profiting expectation (demand, price level, transportation costs etc).

Direct retail marketing to final consumers is also practiced by some farms, and it is chiefly important for *vegetables*. It takes various forms - from on-spot *"street"* or "along the *road" sells*, through *trade "on farm"* or *"farmers markets*", to a customized *"home delivery*". Here freshens, appearance, origin, production technology (e.g. organic farming) of delivered products is extremely important for consumers.

This mode does not involve big volumes and serve local customers and visitors (e.g. tourists). Despite "superior" sell costs (smaller amounts of deals) this form allows to realize "full" (retail) benefits of marketing and to get higher pay-off on investments in special capital - special varieties, origin, and quality of farm products; elaborated personal (client) relationships with buyers etc.

While most farms practicing retail trade deal with many buyers, for around 10% of them (smaller holdings) clientalisation takes place and they have always the same buyer. In addition, cooperatives are traditionally used to supply basic food (e.g. meat, cheese) for their members and rural communities.

Surveyed farms notify that "*best prices", "maximum profit"* and *"low costs"* are the chief reasons for preferences to the retail form of marketing. However, in many cases the direct marketing by smaller producers is illegal – e.g. meat and milk do not correspond to formal hygiene and sanitary standards; traded vine is not certified etc.

Member (own) cooperative is used only for a part of *fruits and grape*, and *grain* marketing.

The collective mode of marketing (marketing or general purpose cooperative) is associated with a number of transacting benefits unachievable by individual farms – economy of scale and scope of marketing activities (search, promotion, operational etc. costs savings), better negotiating positions, interlinking transactions with storing, transportation, retails etc. That is why this form is common only for non-large farms.

"Maximum security", "low costs" and *"best prices*" are identified as major factors for using the own cooperative for marketing. Intensity of sell transacting through that mode is high and all applying farms "always" or ""mainly" use the same cooperative for marketing outputs.

Nevertheless, despite the great potential for governing of transactions (non-for-profit member-owned organization) this mode is not widely used by farms – as little more than 4% of surveyed farms are members of marketing cooperatives. In transitional conditions development and maintenance costs of cooperative organization are quite high and

majority of farms prefer to use other (more effective) market and private modes for governing relations with other agents.

Selling out to *state reserve* is important marketing channel for a good number of registered and larger *grain* producers. State purchase contract is "preferred mode" for large farms since it gives a number of transacting advantages – a "stable" demand, a good price, a secure payment, low negotiation and enforcement costs.

However, the total amount of marketed grain through that mode is relatively small. In certain years before EU accession there are incidences to use state purchase and sells as a mean to stabilize market prices as well[53].

"*Minimum risk"* and *"tradition"* are the most common factors for preferring the state agency as a partner by farms.

Intra-farm (own) processing of farm output is most important for realization of *fruits and grape,* and to lesser extend for *meat* and *milk.*

This mode of "internal marketing" is mainly practiced by larger farms. Namely the larger operational size and the high frequency of transacting give an economic opportunity for internal exploration of inter-dependant assets (in farming and processing).

On the other hand *vertical integration* let to protect dependant investments and to pay-off from marketing of final (processed) products – getting full profit (on farm *and* food products), trade with special brand names, lessen market dependency (easy storage and transportation) etc.

Most often cited reasons for intra-farm (production) "consumption" of farming products are *"maximum security", "maximum profit*" and *"minimum risk*".

Interlinked contracts are frequently used by surveyed farms where a supplier also *"purchases the farm output".* To the greatest extend these contracts are applied with the suppliers of *seeds, chemicals, forage, and animals*.

This form is an indicator for emerging or existing (quasi, complete) *vertical integration* of farming carried out through tight up marketing and inputs supply contracts. Usually integrator is a large farmer, trader or processor (mostly seeds and animal dealers, milk or meat processors). This form of governance "secure" inputs supply of needed farm products and row materials (in particular *periods, quantities, qualities, origins*) of the integrator through interlinking the critical inputs supply to farms.

In some instances, the outside integrator own the technological know-how or exclusive rights on agrarian products (variety of seeds, breads of animals etc.) and

[53] Since 2007 EU CAP is applied having "market intervention" as a main pillar.

contract the mass production with respective farms. In these cases, the integrator is the exclusive supplier of farms with these inputs (produced or distributed by integrator).

In other instances, the integrator "organizes" supply of critical to farming inputs (e.g. forage) in order to guarantee the quality of needed farm products (e.g. row milk). This mode is preferred by farms since it allows economizing on transacting costs for supply of critical inputs and marketing of major products.

In a good portion of farms *"supplier assists sells"* and that is particularly truth for large farms for supply of forage and animals; for a significant share of smaller farms for seeds supply; and for a part of middle-size and cooperative farms for chemical supply.

This "free of charge mediation" in organization of marketing deals (interlinking supply with a new service of mediation) makes a particular supplier preferred among competitors. It secure a stable (or increasing) demand of material inputs from a particular farms while for participating farms that "trilateral" organization minimizes costs of marketing of final output restricting associated uncertainty.

For majority of surveyed farms (including all unregistered and small farms) there is an *alternative buyer* (s) and they are in a position to chose the most effective way for (and thus to govern) marketing of outputs. Only 5% of surveyed farms report they have a *single* buyer, and therefore face a unilateral dependency (monopoly) situation.

Most commercialized farms confront to the greatest extend the *"missing" market* situation - more than 12% of the largest farms. The lack of markets is particularly vital for vegetable producers where according to one-forth of them (exclusively middle-sized firms) there are no buyers of output at all. Missing market situation is also being faced by a good part of grain producers which accounts for as much as 12% of the large and the cooperative farms. Apparently a significant number of commercial vegetable and grain farms "overproduce" or can not effectively meet the "market demand" for quality and packing requirements, acceptable prices etc. for farm products.

In addition, for a significant number of farms *"there is no information for buyer*" which makes marketing of vegetables and grain difficult.

"Low prices" and *"unstable prices"* are the main problems for marketing of *all* sort of farm produce in all surveyed farms. It proves that majority of farms are still not able to react effectively to market competition and (seasonal) fluctuation of market prices.

Besides, *"lack of price information*" is an important factor obstructing marketing of grain, fruits and vegetables. Asymmetry of information in all but vegetables markets is quite significant and a good portion of farms feel that *"buyer is better informed"* which impedes marketing.

As far as major *factors for successful marketing* are concerned for *all products* the most important for farms are the “beneficial prices” and the *“mutual benefits for partners*”.

On the other hand only negligible number of farms consider outside intervention (*a “third party support”*) as crucial for the marketing deals. Moreover, a minor share of farms (fruits and grape producers being exception) regards the *“lack of competition”* as critical for the effective organization of marketing.

All these prove that for most farms the expectations for well working markets (and thus for a fair unassisted exchange) is the most important factors for marketing of farm produces.

“Unreliability of the buyer” is among the chief factor impeding marketing of surveyed farms. With small exceptions (in marketing of vegetables of larger farms) tendency for opportunistic behavior of buyers dominates. Irrelevant to the type of farms most surveyed farms are a vulnerable side having no reliable (personal, private, public) mechanisms to control the opportunism of downstream partners.

Moreover, for a significant number of fruit and grape, vegetables, meat and milk producers the *“breach of contracts*” is a major problem in marketing deals. In addition, for majority of smaller farms the *“enforcement of contract terms”* is a serious problem.

For the vegetables, fruits and grape, meat, and milk it is often very difficult to formulate in a written (contract) form and to dispute negotiated provisions for quality and quantity variations, time of delivery, sequential obligations of either partners etc. Besides, contract enforcement for *perishable* products through a third party is quite expensive or impossible at all (technical feasibility, slow or ineffectively working court system). That is why some small and inexperienced farms are experiencing essential problems with marketing contracts and enforcement of contract terms.

As far as main factors for successful marketing is concerned the *“trust”* and the *“good intention of partners”* are important for all type of producers. *“Tradition”* also plays a bigger role in effective sell for some part of surveyed farms. All that means that informal governing *mechanisms* (such as trust, long-term personal relations, self-restriction of opportunism, self-enforcement of contract) are considered as extremely important for the successful organization of marketing deals of farms.

Besides, the *“existence of written contracts”* is a critical factor for marketing of vegetables, fruit and grape, and milk while the *“oral agreements”* are important for vegetables and meat producers. The later confirms that for more “delicate” (perishable) farm products a contract coordination (price, quality, quantity etc. adjustments) is essential and necessary for the effective organization of transacting.

Our survey has found out that majority of farms put great *efforts and time* for “finding markets for marketing of farm outputs”. The high costs of marketing are particularly typical for middle-size and large registered farms. These farms are the most commercialized and their overall efficiency strongly depends on the efficiency of marketing organization. That is why these farms invest (“efforts and costs”) to a greater extend in marketing than other farms.

Nevertheless, while the general level of costs for finding best markets in larger farms is high, the relative level of transacting costs (per unit of output) is presumably lower than is small(er) farms. The larger operational size allows exploring economies of scale and scope of marketing activity, gives better negotiating and enforcement positions, and let effective investment in specific capital for marketing such as information costs, advertisement, product promotion, development of reputation and brand names, organization for a direct trade etc.

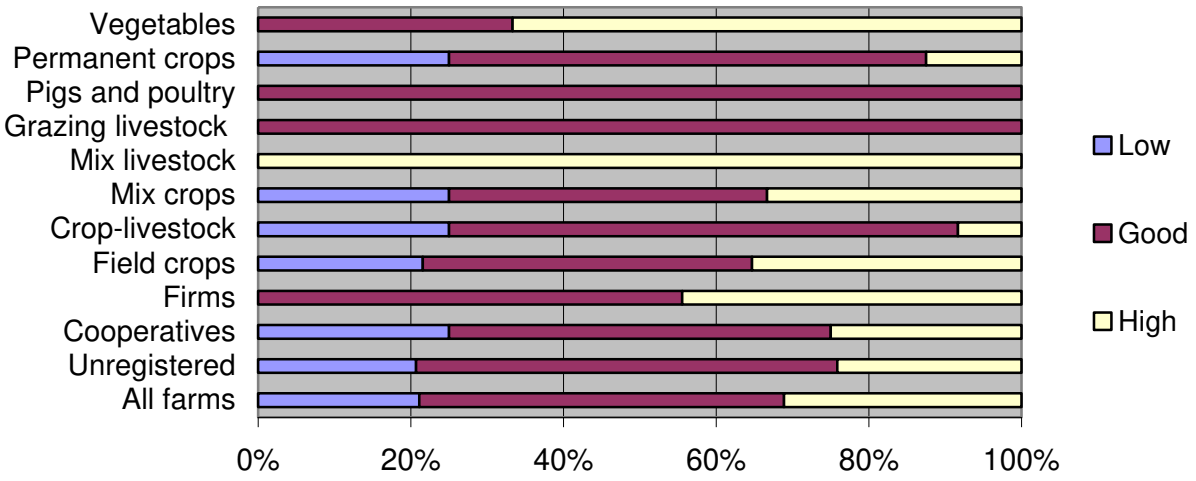
Chapter 16

7. COMPETITIVENESS OF COMMERCIAL FARMS

Our assessment on the competitiveness of commercial farms in the country has found out that the majority of surveyed farms [54] are with a *good* and *high* competitiveness (Figure 24). Nevertheless, more than a fifth of all farms are with a *low* level of competitiveness.

Furthermore, different types and kinds of farms are with *unequal* competitiveness.

Diverse *agri-firms* (Sole traders and Companies) are with good competitive positions and the portion of enterprises with high competitiveness is particularly big. On the other hand, a quarter of *cooperatives* are with insufficient competiveness.



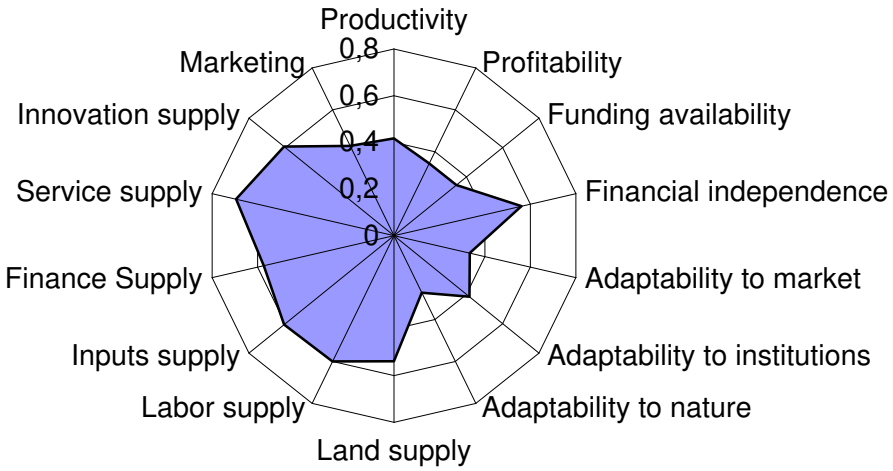
Source: interviews with farm managers

Figure 24. Share of farms with different levels of competitiveness in Bulgaria

[54] This chapter of the book is based on interviews with farm managers of 58 unregistered holdings, 104 cooperatives, and 18 agri-firms conducted in the middle of 2010.

Most of the highly competitive farms are specialized in *mix livestock*[55] and *vegetables*. For all other groups of specialization, the farms with a good competitiveness comprise the greatest share in respective groups. In *mix crop-livestock*, *mix crops* and *permanent crops* every forth farm is non-competitive.

The analysis of different *aspects* of the farms competitiveness shows that the farms' low productivity, profitability and funding availability, and insufficient adaptability to market, institutional and natural environment, and serious problems in financial and innovation supply and in marketing of products and services, all contribute to the greatest extend to decreasing the overall level of farms competitiveness (Figure 25).



Source: interviews with farm managers

Figure 25. Importance of individual elements of farm competitiveness in Bulgaria

The analysis of the *level of efficiency* of diverse type of farms shows that majority of farms have a good productivity, profitability, financial availability and financial independence (Table 15).

However, according to the managers of a considerable number of unregistered holdings, and grazing livestock, pigs and poultry, and mix crop-livestock farms the *productivity* of their farms is low.

[55] The number of surveyed farms in groups with specialization in "Mix livestock", "Grazing livestock", and "Pigs and poultry" is very small (only 2).

Table 15. Share of farms with different level of efficiency in Bulgaria (percent)

Type of farms	Productivity			Profitability			Financial availability			Financial dependency		
	low	good	high	low	good	high	low	good	high	low	average	high
Unregistered	44,83	48,28	6,90	51,72	37,93	10,34	62,07	20,69	17,24	51,72	34,48	13,79
Cooperatives	11,54	84,62	1,92	26,92	73,08	0,00	25,00	75,00	0,00	23,08	53,85	23,08
Firms	11,11	55,56	33,33	33,33	55,56	11,11	33,33	55,56	11,11	22,22	55,56	22,22
Field crops	15,69	74,51	9,80	29,41	64,71	5,88	29,41	60,78	9,804	25,49	54,9	19,61
Mix crop-livestock	38,46	46,15	7,69	46,15	53,85	0,00	46,15	46,15	7,69	46,15	38,46	15,38
Mix crops	33,33	66,67	0,00	50,00	50,00	0,00	41,67	58,33	0,00	33,33	50,00	16,67
Mix livestock	0,00	100,00	0,00	0,00	0,00	100,00	0,00	100,00	0,00	0,00	100,00	0,00
Grazing livestock	100,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00	0,00
Pigs and poultry	100,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00	0,00
Permanent crops	0,00	100,00	0,00	25,00	75,00	0,00	62,50	37,50	0,00	37,5	25,00	37,50
Vegetables	33,33	66,67	0,00	33,33	66,67	0,00	33,33	66,67	0,00	33,33	33,33	33,33
All farms	22,22	70,00	6,67	35,56	60,00	4,44	37,78	55,56	6,67	32,22	47,78	20,00

Source: interviews with farm managers

Furthermore, *profitability* of 36% of all farms is evaluated as low, and more than a half of unregistered farms, and a considerable fraction of mix crop-livestock, mix crops, grazing livestock, and pigs and poultry farms are in this group.

A significant portion of farm managers declare that *availability of finance* is insufficient, and unregistered holdings, farms specialized in mix crop-livestock, mix crops, grazing livestock, pigs and poultry, and permanent crops, suffer the most from the lack of funding.

Only a fifth of survey farms are heavily *dependent from outside funding* (credit, state support etc.) as share of highly dependent farms specialized in permanent crops and vegetables is the greatest.

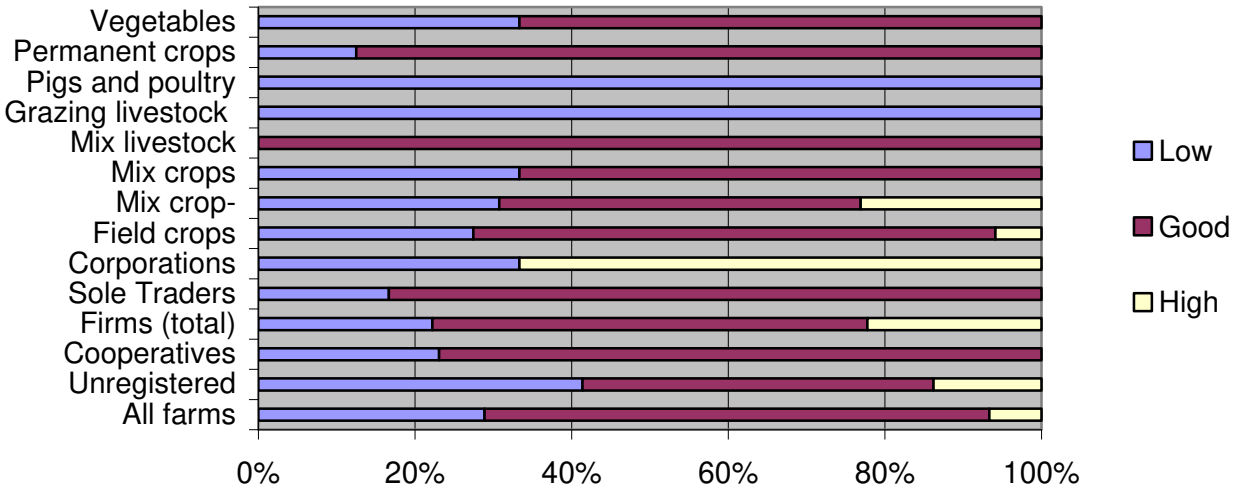
The analysis of the *level of adaptability* of surveyed farms has found out that more than a quarter of them are with a low potential for adaptation to *new state and EU quality, safety, environmental etc. standards,* almost 37% are less adaptable to *market demand, prices and competition,* and every other one is inadaptable to *evolving natural environment* (warning, extreme weather, droughts, floods, etc.) (Table 16).

Table 16. Share of farms with different level of adaptability in Bulgaria (percent)

Type of farm	Adaptability to:								
	market			institutions			nature		
	low	good	high	low	good	high	low	good	high
Unregistered	51,72	48,28	0,00	31,03	68,97	0,00	37,93	55,17	6,90
Cooperatives	34,62	65,38	0,00	23,08	71,15	5,77	61,54	36,54	0,00
Firms	0,00	66,67	33,33	22,22	22,22	55,56	22,22	44,44	33,33
Field crops	41,18	54,90	3,92	21,57	64,71	13,73	54,90	41,18	3,92
Crop-livestock	38,46	61,54	0,00	38,46	61,54	0,00	38,46	61,54	0,00
Mix crops	25,00	75,00	0,00	16,67	83,33	0,00	58,33	25,00	16,67
Mix livestock	0,00	100,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00
Grazing livestock	100,00	0,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00
Pigs and poultry	100,00	0,00	0,00	0,00	100,00	0,00	0,00	100,00	0,00
Permanent crops	25,00	75,00	0,00	37,50	62,50	0,00	50,00	37,50	0,00
Vegetables	0,00	66,67	33,33	33,33	33,33	33,33	0,00	66,67	33,33
All farms	36,67	60,00	3,33	25,56	65,56	8,89	50,00	43,33	5,56

Source: interviews with farm managers

As far as *farm medium-term sustainability* is concerned, it is evaluated by 29% of the farms managers as low. The share of unregistered holdings, grazing livestock, and pigs and poultry farms with a small sustainability is the biggest (Figure 25).



Source: interviews with farm managers

Figure 27. Share of farms with different levels of medium-term sustainability in Bulgaria

On the other hand, less that 7% of all farms "forecast" a high mid-term sustainability. A particular type of firms – the *companies,* is the only exception among surveyed farms, and two-third of these enterprises envisages being highly sustainable in years to come.

Detailed analysis of the diverse *factors* diminishing farms long-term efficiency and sustainability indicates that the *significant problems* in the effective *marketing of products and services*, and in the effective *supply of needed innovation and know-how*, are the most important for the good part of surveyed farms (Table 17). Apparently, the later farms have no (internal) adaptation potential to overcome these type of problems and will be unsustainable (inefficient) is a longer run[56].

[56] These farms either have to restructure production, or reorganize farm (new governance), or will disappear in near future.

Table 17. Share of farms with different level of problems of farm sustainability in Bulgaria (percent)

Type of problems	All farms	Unregistered	Cooperatives	Firms	Field crops	Crop-livestock	Mix crops	Mix livestock	Grazing livestock	Pigs & poultry	Permanent crops	Vegetables
Effective supply of needed land and natural resources												
Insignificant	23,33	37,93	17,31	11,11	23,53	15,38	25,00	0,00	0,00	100,00	25,00	33,33
Normal	61,11	44,83	67,31	77,78	62,75	69,23	66,67	100,00	100,00	0,00	37,50	33,33
Significant	14,44	17,24	13,46	11,11	13,73	15,38	8,33	0,00	0,00	0,00	25,00	33,33
Effective supply of needed labor												
Insignificant	34,44	51,72	26,92	22,22	33,33	30,77	33,33	0,00	0,00	100,00	50,00	33,33
Normal	51,11	31,03	61,54	55,56	50,98	53,85	58,33	100,00	0,00	0,00	50,00	33,33
Significant	14,44	17,24	11,54	22,22	15,69	15,38	8,33	0,00	100,00	0,00	0,00	33,33
Effective supply of needed inputs												
Insignificant	32,22	48,28	25,00	22,22	29,41	46,15	41,67	0,00	100,00	100,00	12,50	0,00
Normal	56,67	31,03	69,23	66,67	66,67	30,77	50,00	100,00	0,00	0,00	62,50	33,33
Significant	11,11	20,69	5,77	11,11	3,92	23,08	8,33	0,00	0,00	0,00	25,00	66,67
Effective supply of needed finance												
Insignificant	30,00	55,17	13,46	44,44	31,37	38,46	25,00	0,00	0,00	100,00	0,00	66,67
Normal	54,44	20,69	73,08	55,56	56,86	30,77	66,67	100,00	0,00	0,00	75,00	33,33
Significant	14,44	24,14	11,54	0,00	9,80	30,77	8,33	0,00	100,00	0,00	25,00	0,00
Effective supply of needed services												
Insignificant	48,89	51,72	44,23	66,67	49,02	46,15	66,67	0,00	0,00	100,00	37,50	33,33
Normal	41,11	27,59	51,92	22,22	43,14	30,77	25,00	100,00	100,00	0,00	62,50	33,33
Significant	10,00	20,69	3,85	11,11	7,84	23,08	8,33	0,00	0,00	0,00	0,00	33,33
Effective supply of needed innovation and know-how												
Insignificant	42,22	62,07	30,77	44,44	43,14	23,08	41,67	0,00	100,00	100,00	50,00	66,67
Normal	36,67	20,69	44,23	44,44	37,25	46,15	41,67	100,00	0,00	0,00	25,00	0,00
Significant	20,00	17,24	23,08	11,11	19,61	30,77	16,67	0,00	0,00	0,00	12,50	33,33
Effective marketing of products and services												
Insignificant	17,78	34,48	5,77	33,33	17,65	15,38	16,67	0,00	100,00	100,00	0,00	33,33
Normal	50,00	37,93	59,62	33,33	56,86	46,15	50,00	100,00	0,00	0,00	12,50	66,67
Significant	30,00	27,59	30,77	33,33	23,53	38,46	33,33	0,00	0,00	0,00	75,00	0,00

Source: interviews with farm managers

The serious (unsolvable) problems associated with the *marketing* are critical for a considerable section of agri-firms, and farms specialized in mix crop-livestock, and permanent crops. The severe problems in the effective *supply of needed innovation and know-how* are most important for the sustainability of cooperatives, mix crop-livestock, and vegetable farms.

Furthermore, great difficulties in effective *supply of needed land and natural resources* face a quarter of farm specialized in vegetables and permanent crops.

Harsh problems in effective *supply of needed labor* are critical only for grazing livestock holdings.

Big difficulties in effective *supply of needed inputs* experience a good fraction of unregistered holdings, and farms specialized in vegetables, permanent crops, and mix crop-livestock production.

Significant problems in effective *supply of needed finance* are reported by a main part of unregistered holdings, and farms specialized in grazing livestock, mix crop-livestock, and permanent crops.

Finally, substantial difficulties in effective *supply of needed services* are common for a big section of unregistered holdings, and farms specialized in permanent crops and mix crop-livestock operations.

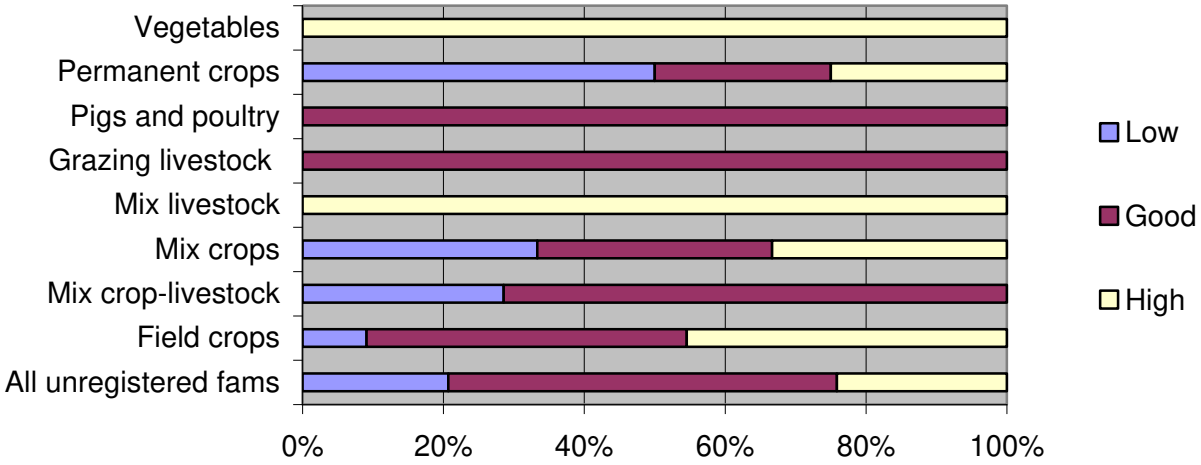
Competitiveness of unregistered farms

The majority of surveyed unregistered holdings are with a *good* level of competitiveness, and around 24% of them are *highly* competitive (Figure 28). At the same time, more than a fifth of all unregistered farms are not competitive.

Unregistered holdings with a different specialization are with *unequal* competitiveness.

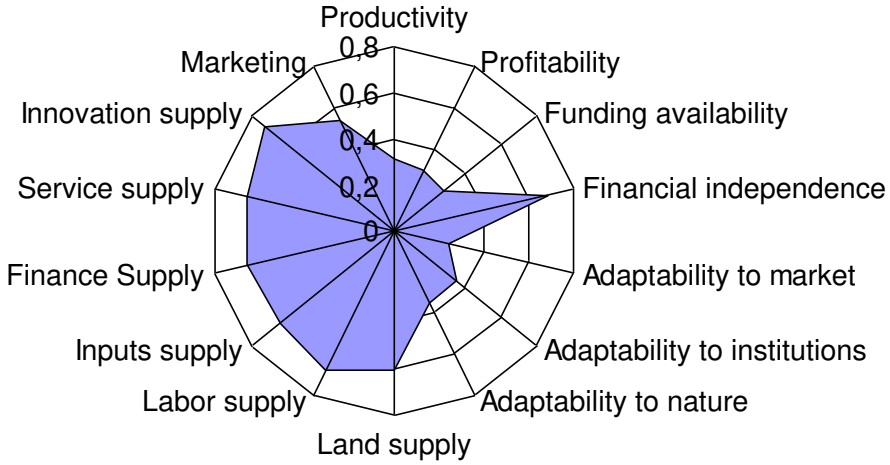
Most highly competitive farms are in *vegetables, field crops*, and *mix livestock* productions. On the other hand, a half of the holdings in *permanent crops*, a third of all farms in *mix crops*, and 29% of *mix crop-livestock* operators are with a low level of competitiveness.

The analysis of different *components* of the competitiveness of unregistered holdings indicates that the low productivity, profitability, and funding availability, along with the insufficient adaptability to changing market, institutional and nature environment, and the severe problems associated with marketing of products, are mostly responsible for diminishing the competitiveness of these farms (Figure 29).



Source: interviews with farm managers

Figure 28. Share of unregistered farms with different levels of competitiveness in Bulgaria



Source: interviews with farm managers

Figure 29. Importance of individual elements of competitiveness of unregistered farms in Bulgaria

On the other hand, the higher efficiency in supply of factors of production and the lower dependency from outside funding, enhance the overall competitiveness of unregistered farms.

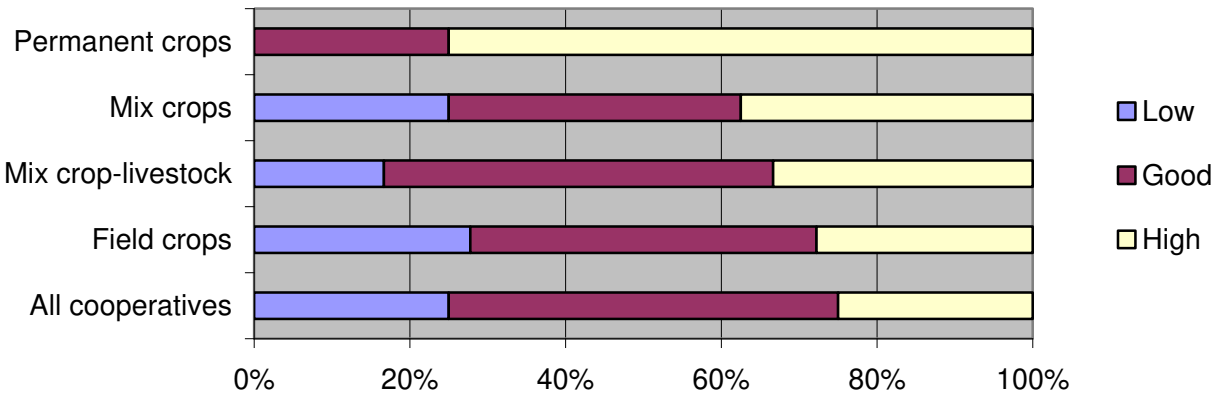
Competitiveness of cooperative farms

A half of surveyed cooperatives are with a *good* level of competitiveness, and a quarter of them are *highly* competitive (Figure 30). At the same time, one out of four cooperatives is not competitive.

The cooperatives with a diverse specialization are with *different* level of competitiveness.

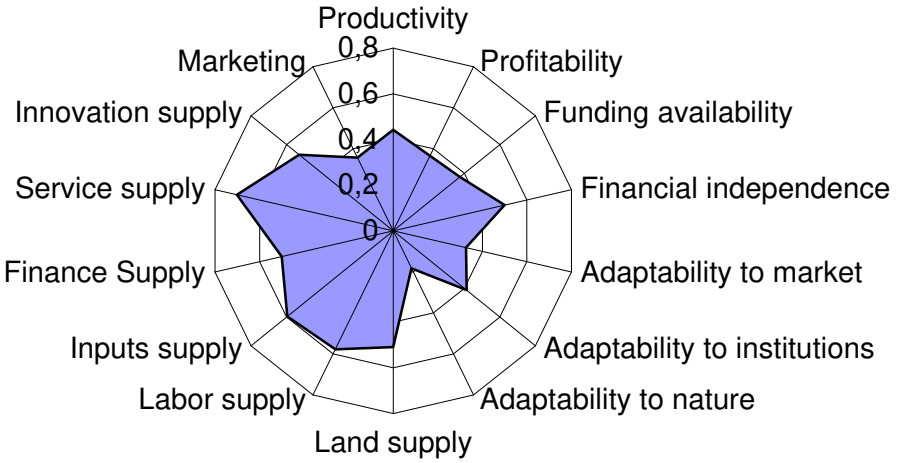
Most of the highly competitive cooperatives are in *permanent crops* and *mix crops*. At the same time, a significant number of cooperatives in *field crops* and *mix crops* are with a low level of competitiveness.

The analysis of different *elements* of the competitiveness of cooperatives shows that the low productivity, profitability, financial availability and independency, together with the insufficient adaptability to market, institutional and nature environment, and the difficulties associated with finance, land and innovation supply and marketing mainly affect the reduction of competitiveness of cooperatives (Figure 31).



Source: interviews with farm managers

Figure 30. Share of cooperatives with different levels of competitiveness in Bulgaria



Source: interviews with farm managers

Figure 30. Importance of individual elements of competitiveness of cooperatives in Bulgaria

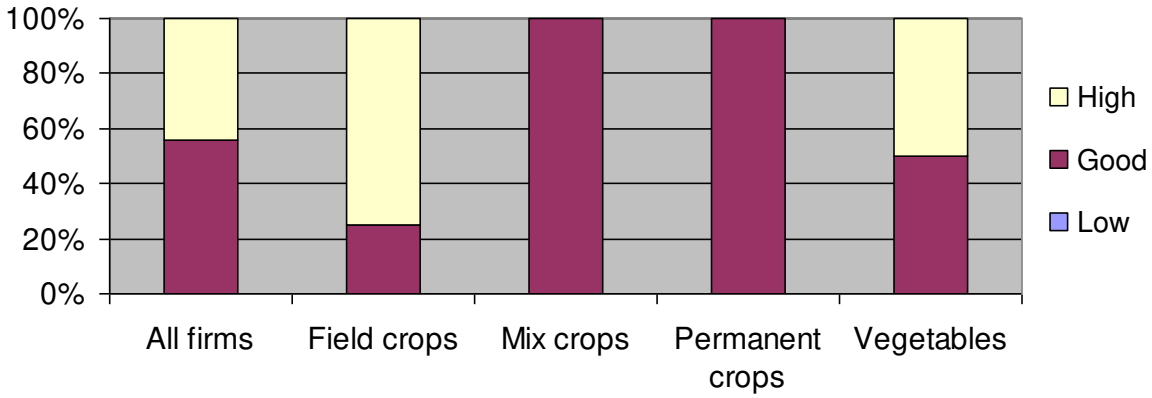
Competitiveness of agri-firms

All surveyed agri-firms are with a *good* or a *high* competitiveness. What is more, a significant number of these farms (44%) are highly competitive (Figure 31).

Nevertheless, while three-quarter of the firms in *field crops* are with high level of competitiveness, all firms in *mix crops* and *permanent crops* are with a good competitiveness, and *vegetables* producers are equally divided in good and high competitive groups.

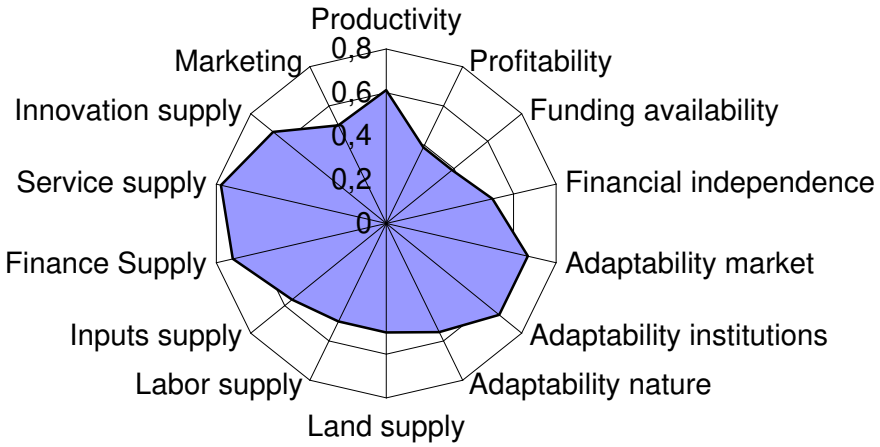
The analysis of individual *factors* the competitiveness of agri-firms exposed that the low productivity, profitability, funding availability and independency, and the serious problems in labor and land supply and marketing, greatly contribute to decreasing firms competitiveness (Figure 32).

On the other hand, the high adaptability of firms to evolving market and institutional environment, and their considerable efficiency in finance, innovation and service supply raise the overall competitiveness of these farming enterprises.



Source: interviews with farm managers

Figure 31. Share of agri-firms with different levels of competitiveness in Bulgaria



Source: interviews with farm managers

Figure 32. Importance of individual elements of competitiveness of agri-firms in Bulgaria

CONCLUSION

We have demonstrated that the New Institutional and Transaction Costs Economics is a powerful methodology which let us better understand the "logic" and adequately assess the farm contracts, efficiency and competitiveness in the specific market, institutional and natural environment of a particular agrarian agent, type of farm, sub-sector of agriculture, and country.

The analysis of the post-communist transition and EU integration of Bulgarian agriculture has found out that fundamental property rights and institutional modernization has been associated with evolution of a specific farming structure consisting of numerous small-scale and subsistent holdings and a few large cooperatives and agro-firms. Furthermore, agrarian agents have developed and use a great variety of effective contractual arrangements to govern their relations, resources and activities – formal, informal, simple, complex, interlinked, market, private, collective, bilateral, trilateral, multilateral, hybrid etc.

Various type of farms and contracts have quite different efficiency, adaptability, and sustainability in the specific Bulgarian conditions of undeveloped markets, badly defined and/or enforced formal rights and rules, inefficient forms of public intervention, specific "Bulgarian" way of EU "common" policies implementation, dominant informal "rules of the game" etc. What is more, diverse farming organizations possess unlike competitive advantages in rapidly changing market, institutional and natural environment. While most market farms are with a good competitiveness, a great part of agri-firms are highly competitive, and a considerable fraction of unregistered holdings and cooperatives uncompetitive.

Suggested new approach has a significant academic as well as practical importance.

First, it provides a new framework for analyzing and assessing farm contracts and competitiveness in individual sub-sectors, regions, and countries.

Next, it gives new tools for assisting the design of individuals, business, and collective contracts and organizations, and for improving public policies and forms of public intervention in agrarian sector.

Finally, it gives new devices for making more realistic prediction about likely prospects of development of farming structures in the specific conditions of different sub-sectors, regions, and countries.

REFERENCES

Bachev, H. (1996). *Organization of Agrarian Transactions in Transitional Economies*, paper presented at the 8th Congress of the European Association of Agricultural Economists "Redefining the Roles for European Agriculture", 3-7 September, Edinburgh.

Bachev, H. (2000). Bulgarian Experience in Transformation of Farm Structures, *Farm Management and Rural Planning No 1,* Fukuoka: Kyushu University Press, 181-196.

Bachev, H. (2004). Efficiency of Agrarian Organizations, *Farm Management and Rural Planning No 5,* Fukuoka: Kyushu University Press, 135-150.

Bachev H. (2005). *Assessment of Sustainability of Bulgarian Farms*, paper prepared for presentation at the XIth Congress of the EAAE "The Future of Rural Europe in the Global Agri-Food System", Copenhagen, Denmark, August 24-27, 2005 www.eaae2005.dk/POSTER_PAPERS/SS34_16_Bachev.pdf

Bachev, H. (2006). Governing of Bulgarian Farms – Modes, Efficiency, Impact of EU Accession, In: J., Curtiss, A., Balmann, K. Dautzenberg, and K. Happe, (editors), *Agriculture in the Face of Changing Markets, Institutions and Policies: Challenges and Strategies,* Halle (Saale): IAMO, 133-149.

Bachev, H. (2007). National Policies Related to Farming Structures and Sustainability in Bulgaria, In: A., Cristoiu, T., Ratinger, S. Gomez, and Y. Paloma, (Editors), *Sustainability of the Farming Systems: Global Issues, Modeling Approaches and Policy Implications*, Seville: EU JRC IPTS, 177-196.

Bachev, H. (2008). Post Communist Transformation in Bulgaria-Implications for Development of Agricultural Specialization and Farming Structures, in S. Ghosh (Editor), *Agricultural Transformation: Concepts and Country Perspectives,* Punjagutta: The Icfai University Press, 91-115.

Bachev, H. (2009). *Governing of Agro-ecosystem Services. Modes, Efficiency, Perspectives,* Saarbrucken: VDM Verlag.

Bachev, H. (2010). *Governance of Agrarian Sustainability*, New York: Nova Science.

Bachev, H. and Tsuji, M. (2001). Structures for Organization of Transactions in Bulgarian Agriculture, *Journal of the Faculty of Agriculture of Kyushu University, No 46(1),* 123-151.

Bachev, H. and Kagatsume, M. (2002). Governing of Financial Supply in Bulgarian Farms, *The Natural Resource Economics Review No 8,* Kyoto: Kyoto University Press, 131-150.

Bachev, H. and Labonne, M. (2000). *About Organization of Agrarian Innovations*, Montpellier: INRA.

Bachev, H. and Manolov I. (2007). *Inclusion of small scale dairy farms in the supply chain in Bulgaria (a case study from the Plovdiv region),* Regoverning Markets Innovative Practice series, London: International Institute for Environment and Development.

Bachev, H. and Nanseki, T. (2008). *Risk Governance in Bulgarian Dairy Farming*, paper presented at the 12th Congress of the European Association of Agricultural Economists "People, Food and Environments–Global Trends and European Strategies", 26-29 August 2008, Ghent (http://ageconsearch.umn.edu/bitstream/44136/2/240.pdf).

Bachev, H. and Peeters, A. (2005). Framework for Assessing Sustainability of Farms, *Farm Management and Rural Planning No 6*, Fukuoka: Kyushu University, 221-239.

Barry, P., Sonka, T. and Lajili, K. 1992. Vertical Coordination, Financial Structure, and the Changing Theory of the Firm. *American Journal of Agricultural Economics 74, No 5,* 1219-1225.

Benson, G. (2007). *Competitiveness of NC Dairy Farms*, North Carolina State University, http://www.ag-econ.ncsu.edu/faculty/benson/DFPPNatComp01.PDF

Boger, S. and Beckman, V. (2004). Courts and contract enforcement in transition agriculture: Theory and evidence from Poland. *Agricultural Economics, 31*, 251-263.

Csáki, C. and Lerman, Z. (2000). *Structural change in the farming sectors in Central and Eastern Europe,* World Bank Technical Paper Volume 465, Washington DC.

Coase, R. (1937). The Nature of the Firm, *Economica 4*, 386-405.

Delgado, C., Clare, N. and Marites, T. (2003). Policy, Technical, and Environmental Determinants and Implications of the Scaling-Up of Livestock Production in Four Fast-Growing Developing Countries. Rome: FAO.

Dupraz, P., Latouch, K. and Bonnieux F. (2004). *Economic Implications of Scale and Threshold Effects in Agri-environmental Processes*, paper presented at the 90 EAAE Seminar, 27-29 October 2004, Rennes.

Eswaran, M. and Kotwal, A. (1985). A theory of Contractual Structure in Agriculture, *American Economic Review, 75*, 352-367.

Farmer, M. (2007). *The Possible Impacts of Cross Compliance on Farm Costs and Competitiveness,* Institute for European Environmental Policy, KVL

http://www.ieep.eu/projectMiniSites/crosscompliance/index.php

Fertő, I. (2006). The Contractual Relationships in Hungarian Horticultural Sector, in J.Curtiss, A. Balmann, K. Dautzenberg, and K. Happe, (editors), *Agriculture in the Face of Changing Markets, Institutions and Policies: Challenges and Strategies,* Halle (Saale): IAMO, 184-193.

Fertő, I. and Hubbard, L. (2001). *Revealed Comparative Advantage and Competitiveness in Hungarian Agri-food Sectors,* 2002KTK/IE Discussion Papers 2002/8, Institute of Economics Hungarian Academy of Sciences, Budapest.
http://econ.core.hu/doc/dp/dp/mtdp0208.pdf

Furuboth, E. and Richter, R. (1998). *Institutions and Economic Theory: The Contribution of the New Institutional Economics.* Ann Arbor: The University of Michigan Press.

Gortona M. and Davidova, S. (2003). *Farm productivity and efficiency in the CEE applicant countries: a synthesis of results*, Elsevier B.V..

Guo, H., Jolly, R. and Zhu, J. (2007). Contract farming in China: perspectives of farm households and agribusiness firms, *Comparative Economic Studies*. June Issue.

James, H., Klein, P. and Sykuta, M. (2007). *Markets, Contracts, or Integration? The Adoption, Diffusion, and Evolution of Organizational Form*, CORI Working Paper No. 2007-01, Available at SSRN: http://ssrn.com/abstract=980301.

Hayami, Y. and Otsuka, K. (1993). *The Economics of Contract Choice. An Agrarian Perspective.* Oxford: Carendom Press.

Koteva, N. and Bachev, H. (2010). Framework for Assessing Competitiveness of Agricultural Farms, *Agricultural Economics and Management No 1*, 32-43.

Little, P. and Watts, M. (1994). *Living Under Contract: Contract Farming and Agrarian Transformation in Sub-Saharan Africa*, Wisconsin: University of Wisconsin Press.

Martinez, S. (2002). A Comparison of Vertical Coordination in the U.S. Poultry, Egg, and Pork Industries, Current Issues in Economics of Food Markets, *Agriculture Information Bulletin No. 747-05,* U.S. Department of Agriculture, Economic Research Service.

Mathijs, E. and Swinnen, J. (1997). *Production Organization and Efficiency during Transition: An Empirical Analysis of East German Agriculture*, Policy Research Group, Working Paper No. 7, http://www.agr.kuleuven.ac.be/aee/clo/prgwp/prg-wp07.pdf

MAF (2009). *Agrarian paper.* Sofia: Ministry of Agriculture and Food.

Mahmood, K., Saha, A., Gracia, O. and Hemme, T. (2004). *International competitiveness of small scale dairy farms in India/Pakistan,*
http://www.tropentag.de/2004/abstracts/full/376.pdf

Mori, T. (1991). The History of Japanese Agriculture, in *Agricultural Policy in Japan*, XXI IAAE Conference, Tokyo.

NSI (2009). *Statistical Book*. Sofia: National Statistical Institute.

North, D. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge: Cambridge University Press.

Olson, M. (1969). *The Logic of Collective Actions: Public Goods and the Theory of Groups*. Cambridge: Harvard University Press.

OECD (2000). *Review of Agricultural Policies in Bulgaria*. Paris and Sofia: OECD.

Popovic, R., Knezevic, M. and Tosin, M. (2009). *State and Perspectives in Competitiveness of one farm type in Serbia,* paper presented at the 113 EAAE Seminar "The Role of Knowledge, Innovation and Human Capital in Multifunctional Agriculture and Territorial Rural Development", Belgrade, December 9-11, 2009. http://ageconsearch.umn.edu/bitstream/57416/2/Popovic%20Rade%20cover.pdf

Pouliquen, A. (2001). *Competitiveness and farm incomes in the CEEC agri-food sectors. Implications before and after accession for EU markets and policies,* http://ec.europa.eu/agriculture/publi/reports/ceeccomp/sum_en.pdf

Shoemaker, D., Eastridge, M., Breece, D., Woodruff, J., Rader, D. and Marrison, D. (2009). *15 Measures of Dairy Farm Competitiveness*, http://ohioline.osu.edu/b864/pdf/864.pdf

Sporleder, T. (1992). Managerial Economics of Vertically Coordinated Agricultural Firms, *American Journal of Agricultural Economics, Vo l 74, No 5*, 1226-1231.

Swain, B. (2009). *The role of contract farming in agricultural development in globalize world: an institutional economics analysis* http://ideas.repec.org/p/pra/mprapa/ 18683.html.

Williamson, O. (1996). *The Mechanisms of Governance*. New York: Oxford University Press.

Wilson, J. (1986). The Political Economy of Contract Farming, *Review of Radical Political Economics, Vol. 18, No. 4,* 47-70.

Zawalinska, K. (2005). *Changes in Competitiveness of Farm Sector in Candidate Countries Prior to the EU Accession: The Case of Poland*, Paper presented at the 11th Congress of the EAAE "The Future of Rural Europe in the Global Agri-Food System". Copenhagen, August 24-27, 2005. http://ageconsearch.umn.edu/bitstream/24520/1/cp05za01.pdf

INDEX